

PUBLIC COMPANY «GAZPROM»
LIMITED LIABILITY COMPANY
«GAZPROM TRANSGAZ SAINT-PETERSBURG»



CARING ABOUT NATURE,
PRESERVING THE FUTURE

ATTACHMENT

**ENVIRONMENTAL AND SOCIAL MANAGEMENT
MANUAL AT OPERATION OF CS "PORTOVAYA"
AND GAS PIPELINE RIGHT-OF-WAY
FROM CS "VOLKHOVSKAYA"
TO THE PORTOVAYA BAY**

№ 32-03-06-2017

1. References and Abbreviations

- ACU – Air cooling unit;
- AIC – Administrative and industrial control;
- AMD – Administrative Management Directorate of the Company;
- BBH – Block boiler house;
- BOD – Biochemical oxygen demand;
- CA – Corrective action;
- CD – compressor department;
- CD&ES – Civil defense and emergency situations;
- COD – Chemical oxygen demand;
- CS – compressor station;
- CSMPD of MCSO – Compressor Stations Management Production Division of Compressor Stations Operation Department;
- CPS – Corrosion protection service;
- CTW – Commodity Transport Work;
- DFFS - Departmental fire fighting service;
- DGP – Dangerous geological processes;
- DPTw – Dew point temperature (water);
- DS – Dispatcher service;
- E – Environment;
- EAC – Environmental analytical control;
- ECG – Electrocardiography;
- ED – Emergency diesel power plant;
- EDG – Emergency diesel generator;
- EHS – Environment, Health and Safety;
- EI – Environmental Issue;
- EM – Environment;
- EP – Environment protection;
- EPD PDD – Environment protection department of the Prospective Development Department;
- ER – Energy resources;
- ERP – Emergency Response Plan;
- ES – Emergency Situations;

ESMS – Environmental and social management system;
Facilities – CS “Portovaya” and RoW from CS “Volkhovskaya” to Portovaya Bay;
FSR – Fire Safety Rules;
GCS – Gas compression service;
GDS – Gas distribution station;
GDS O&M – GDS operation and maintenance department;
GIS – Geographical information system;
GN – Health standard;
GOST - State Standard;
GPU – Gas pumping unit;
GCP – Gate check point;
GTU – Gas treatment unit for CS own needs;
GTPP – Gas transportation preparation plant;
HIF – Hazardous Industrial Facility;
HRD – Human resources department;
HSD – Health and safety department;
IAS – Instrumentation and automation service;
IEI – Important Environmental Issues;
IEM – Industrial environmental monitoring;
IFC – International Finance Corporation;
IEC - Industrial Environmental Control;
IFC PS – International Finance Corporation Performance Standard;
IFSS – Industrial and fire safety service;
IMS – Integrated Management System;
ITC – Engineering technical center;
KPI – Key performance indicator;
LGPOM – linear O&M service;
Limit – Permissible emission / discharge limit;
LPMMP – Linear department of main gas pipelines management;
MAC – Maximum admissible concentration;
MGPL – Linear section of main gas pipeline;
MM –Mass Media;
MG – main gas pipeline;
MPE – Maximum permissible emission;

MS – Medical service;
MTD – Motor Transport Department;
MVD – Motor vehicles department;
OH&IS – Occupational Health and Industrial Safety;
OPN – Own process needs;
PC – Public Company;
PCIDP – Public Consultations and Information Disclosure Action Plan;
PDD – Prospective Development Department;
PDR – Permissible Discharge Rate;
PDS – Permissible discharge standards;
PDD QO – Quality Office of the Prospective Development Department;
PM – Pollutants, contamination materials;
POL – Petroleum, oil and lubricants;
PS – Polluting substance;
PS IFC – Performance Standard of International Finance Corporation;
PV – Paints and varnishes;
PNOOLR – Waste Generation Standards and Waste Disposal Limits Book;
PPE – Personal protection equipment;
PPON – Power plant for own needs;
PRMMSD – Public Relations and Mass Media Service Department;
RoW – gas pipeline Right-of-Way;
SSV & SMD – Support service vehicles and special machinery department;
PWS - Power and water supply;
PWSD – Power and water supply department;
PWTP – Potable water treatment plant;
P&CPE – Personal and collective protection equipment;
QD PDD– Quality Dpt. at Perspective Development Dpt.(PDD);
QMS – Quality management system;
RF – The Russian Federation;
SanPiN – Sanitary code and practices;
SD – special department;
SHW – Solid household waste;
SHS – Sanitary-hygienic standard;
STF – Sewage treatment facilities;

STO – Company Standard;
SN – Sanitary Norms;
SORR & SOF CROD – Capital Repair Operations Department of Fixed Assets Repair,
Construction and Reconstruction Service;
SPET – Specially protected environmental territory;
SPNT – Specially protected natural territories;
SPZ – Sanitary protection zone;
SSD – Security service department;
STDU – Stationary thermal destruction unit;
STO – Company standard;
TDD PDD – Technical Development Dpt. at Perspective Development Dpt;
TESA – Technical and engineering security aids;
TCB – Total coliform bacteria;
TMN – Total microbe number;
TTCB – Thermo-tolerant coliform bacteria;
VMI – Voluntary medical insurance;
WTTP – Waste thermal treatment plant;
WAP – waste accumulation place.

Appendix № 32-03-06-01-01

Company's obligations concerning quality, environment, occupational health, industrial safety and social activities at operation of CS "Portovaya" and linear section of North-European gas pipeline from CS "Volkhovskaya" to the Portovaya Bay

1 Company's Policy concerning quality, environment, occupational health, industrial safety and social activities at operation of CS "Portovaya" and linear section of gas pipeline from CS "Volkhovskaya" to the Portovaya Bay

"Gazprom transgaz St. Petersburg" Limited Liability Company (hereinafter referred to as the Company), a subsidiary of "Gazprom" Public Company, is a dynamically developing gas transportation enterprise providing uninterrupted supply of natural gas to consumers in the North-West Region of Russian Federation and Western European countries.

The Company is using and improving an Integrated Management System (hereinafter referred to as IMS) in compliance with the requirements of international and national standards, requirements of RF laws and PC "Gazprom", to support quality and safety of services rendered by the Company in the area of transportation and commercial metering of natural gas, as well as topographical surveys, development and capital repairs of gas transportation system facilities.

The present Policy is developed in compliance with PC "Gazprom" corporate policy, and is the basis of IMS, and includes Company's strategic goals and obligations concerning quality, environment, occupational health and industrial safety.

1.1 The Company's strategic goals

The Company's strategic goals are as follows:

- as regards quality – provide uninterrupted transportation and metering of natural gas in compliance with the contractual terms and conditions;
- as regards environment – prevent and mitigate adverse impacts on the environment, ensure the rational use of natural resources, manage the environmental risks in order to preserve the environmental safety ;
- as regards occupational health and industrial safety – establish a safe labor environment, save life and health of the Company's employees and local communities, ensure reliable operation of hazardous industrial facilities and reduce risk of accidents at hazardous

industrial facilities;

– as regards social activities – operate in a socially responsible manner towards general public and local communities situated in the closed proximity to the Company’s facilities, promote provision of local employment and use of local services.

1.2 The Company’s obligations to achieve strategic goals:

The company undertakes the following obligations to achieve the strategic goals:

– comply with the statutory and other applicable requirements concerning quality, technical regulation, environment, health, and safety;

– ensure satisfaction of the consumer’s requirements for gas transportation and metering services;

– provide reliable, accident free and efficient work of main and auxiliary equipment, structures and facilities of the Company’s gas transportation system;

– improve and enhance continuously the efficiency of the Company’s Integrated Management System (IMS);

– minimize adverse impacts on the environment by optimal use of material, financial and personnel resources of the Company allowing to comply with all established statutory and corporate requirements;

– prevent adverse impacts of industrial activities on the personnel and local communities residing in the regions where Company’s gas transportation system facilities are located;

– compensate for damage caused to the environment, the Company’s employees and third parties in the course of Company’s industrial activity;

– improve the energy efficiency of the gas transportation processes;

– maintain professional competence of the Company’s employees;

– keep an open dialogue with the local communities and the Company’s employees about Company’s activities concerning environment, occupational health and industrial safety.

1.3 Means to perform the obligations and achieve the strategic goals of the Company

The means to perform the obligations and achieve the strategic goals include the following:

– Provide efficient use and improvement of IMS in compliance with the requirements of International Standards ISO 9001, ISO 14001, OHSAS 18001 and corresponding national standards GOST R ISO 9001, GOST R ISO 14001, GOST R

54934/OHSAS 18001, as well as applicable corporate requirements of Gazprom PC;

- inform Company's employees and organizations working for and upon authorization of the Company about statutory and other requirements applicable to the Company's activity;

- monitor data on satisfaction of "Gazprom" PC and other consumers with the quality of services rendered by the Company;

- integrate and develop the modern information technologies ensuring use of reliable and current information for making management decisions;

- schedule and perform energy saving, environment, health, and safety actions;

- integrate the results of research and development (R&D), rationalization, and inventive effort;

- integrate and apply state-of-the-art material and equipment, advanced engineering processes, modern technology and mechanical aids;

- put efficient tools into use to control quality and safety of material and technical resources and services purchased by the Company;

- identify risks, probability of occurrence (potential risks) and hazards, which impact the Company's goals concerning quality, environment, occupational health and industrial safety;

- identify the sources of risks, evaluate risks considering probability of their occurrences and significance of their consequences, develop and implement the risk management actions to mitigate risk or completely eliminate it;

- identify environmental and social issues, determine the significant ones to be managed and mitigated;

- carry out industrial and environmental control, monitoring of environment, administrative control and IMS internal audits at the Company's facilities;

- assess and analyze the equipment condition of the Company's gas transportation system, and accident and incident causes;

- perform timely capital repairs work of the Company's gas transportation system facilities;

- Company insurance against risks, including

- environmental and property risks;

- risks related to incidents and occupational diseases of the Company's employees;

- risks related to accidents and emergency at Company's hazardous industrial facilities;

- improve the Company’s employees competence and motivation in quality, environment, health, and safety management;
- involve the Company’s employees in the activities to ensure the safe labor environment and environmental safety;
- build up the sense of personal responsibility for own safe life and health, as well as co-workers;
- consider proposals and initiatives of the employees to improve the IMS and enhance quality of services rendered by the Company, implement the best of them in practices;
- report IMS effectiveness to the parties concerned.

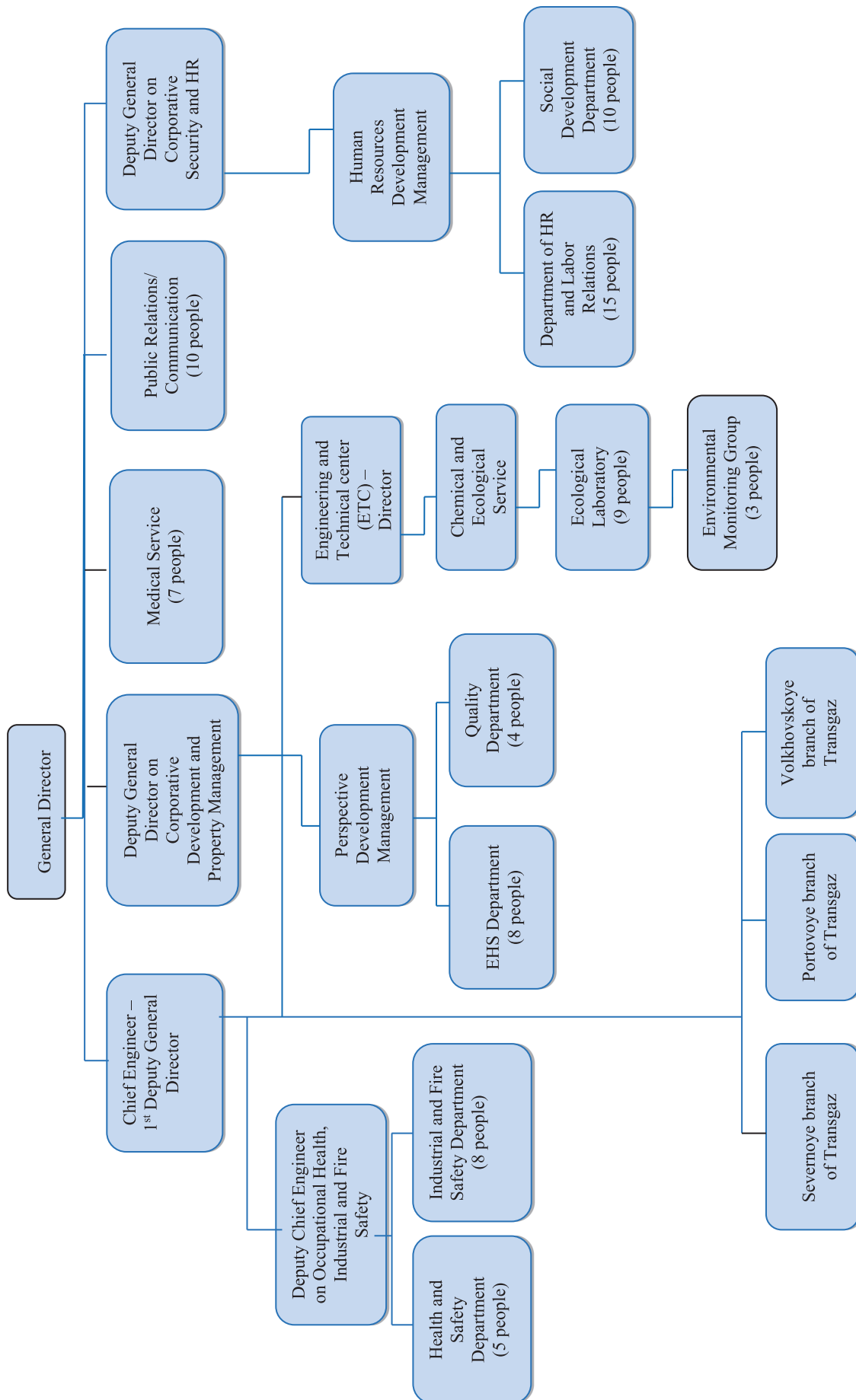
The General Director and Company’s management undertake obligations for effectiveness and consistent improvement of IMS, compliance of IMS with the requirements applicable to it and provision of resources necessary for this purpose.

The present Policy is applicable to all Company’s structural subdivisions and all Company’s employees within the IMS scope, as well as persons working for or on behalf of the Company.

The Policy is the subject to revision, update and enhancement in case of changing corporate priorities of strategic development and terms of Company’s activity, in compliance with the Company’s IMS procedures.

Organization chart

Figure 2.1



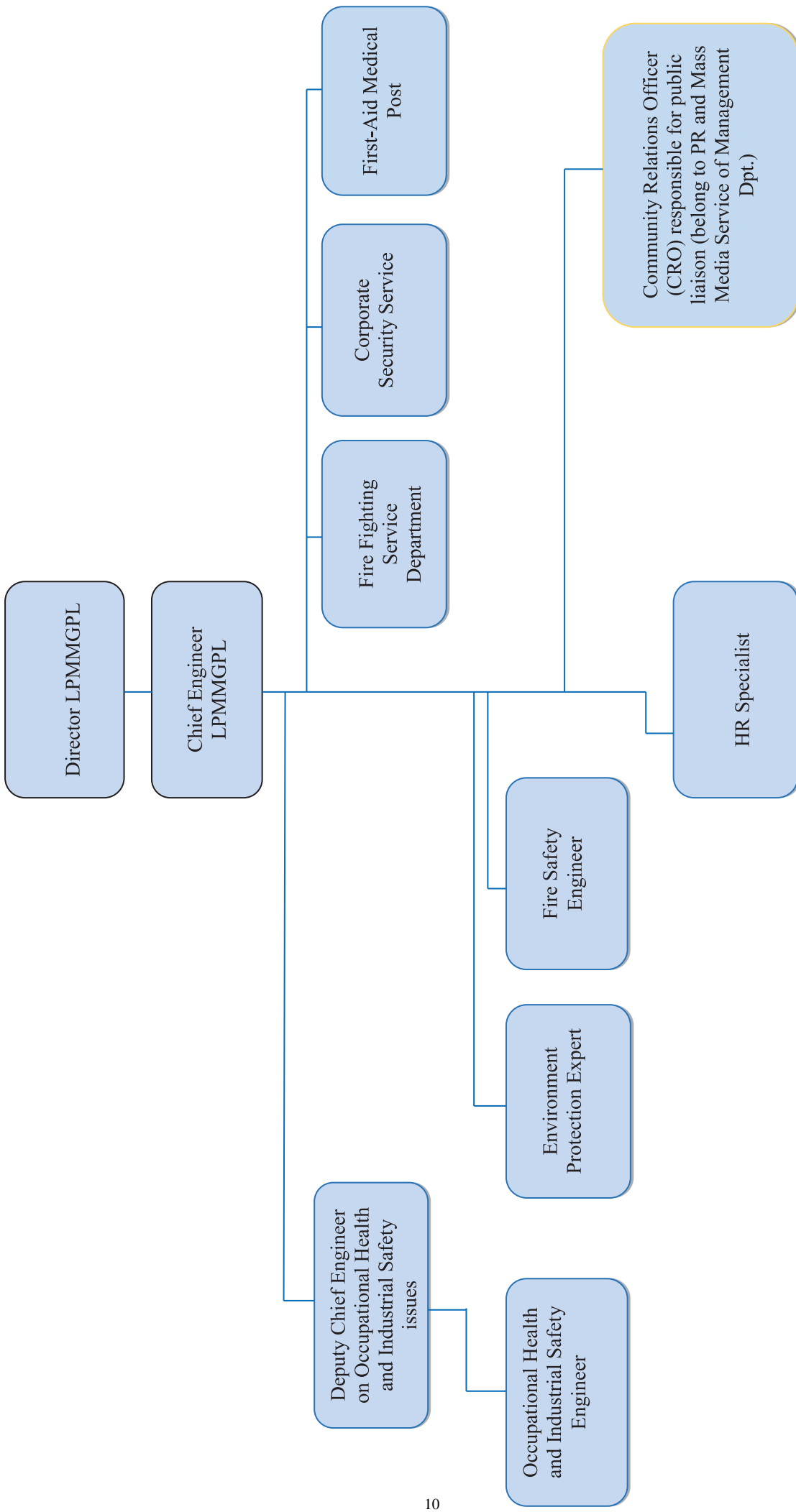


Figure 2.2 – LPMMSGPL organizational chart

Appendix № 32-03-06-01-03
Functions and responsibilities at environmental and social management

Table 3.1.

Management Level	Officer	Official duties and responsibilities
Administrative Management of the Company	General Director	<ul style="list-style-type: none"> - Approves the Company's obligations concerning environment, health, safety, and social activities. - Responsible for formulation and approval of the Company's goals and objectives concerning environment, health and social activities at the operation phase of the Project. - Secure technical, organizational, professional, and financial resources for full implementation of the set goals and objectives. - Assesses efficiency of the Company's environmental and social activities. - Introduces the corrective actions into established goals and objectives involving chief officers of the business units.
	Technical Director – First Deputy General Director	<ul style="list-style-type: none"> - Responsible for achievement of established goals and objectives, compliance with design solutions, Management Procedures, Health and Safety Regulations at operation of industrial facilities.
	Deputy General Director for Corporate Development and Property Administration	<ul style="list-style-type: none"> - Responsible for compliance with the environmental requirements in the Company.
	Deputy General Director for Common Affairs	<ul style="list-style-type: none"> - Manages logistics (transportation) and activities of Protocol and Liaison service.
	Deputy General Director for Corporate Protection and Personnel Management	<ul style="list-style-type: none"> - Manages activities relating to personnel, social development, and corporate protection.
	Deputy Technical Director (for	<ul style="list-style-type: none"> - Manages the Company's activities concerning Occupational Health,

Management Level	Officer	Official duties and responsibilities
	Occupational Health, Industrial and Fire Safety)	Industrial and Fire Safety. <ul style="list-style-type: none"> - Coordinates activities of Occupational Health and Industrial and Fire Safety Departments, including departments of Company's Branches in the area of Occupational Health, Industrial and Fire Safety.
	Chief Officer of Prospective Development Department	<ul style="list-style-type: none"> - Manages the Company's environmental activities. - Manages control over performance of works within the Company's IMS. - Coordinates activities of the Environment Department, including activities with the Company's Branches.
	Chief Officers of: <ul style="list-style-type: none"> - Environment Protection Department. - Occupational Health Department. - Industrial and Fire Safety Department 	<ul style="list-style-type: none"> - Manage activities of the Departments. - Coordinate EHS activities of the Branches. - Take part in development of the EHS Action Plans. - Manage industrial control and monitoring of activities of the Branches. - Manage EHS training of the Company's employees. - Analyze the reports submitted by the Branches. - Responsible for providing annual analytical reports on the Company's EHS activities. - Responsible for interactions with third parties within their competence.
	Chief Officer of Quality Department	<ul style="list-style-type: none"> - Manages activities of the Quality Office. - Coordinates quality assurance activities of the Company's Branches. - Responsible for preparation of analytical reports concerning quality. - Responsible for interactions with third parties within their competence.
	Chief Officer of Public Relations and Mass Media Department	<ul style="list-style-type: none"> - Manages interaction activities with third parties concerned. - Prepares news material on the Company's activities for mass media. - Coordinates sponsorship activities
	Chief Officer of Health Service Department	<ul style="list-style-type: none"> - Schedules and undertakes actions towards medical support to the Company's employees and assigned personnel. - Manages comprehensive medical preventive actions. - Coordinates activities of first-aid medical posts. - Undertakes control over sanitary and epidemiological welfare of the

Management Level	Officer	Official duties and responsibilities
Branch	Director	<p>Company, manage sanitary and hygienic activities.</p> <ul style="list-style-type: none"> - Responsible for compliance with Environment, Health, Safety and Social requirements of Branch's business activities. - Undertakes general management of the Branch's EHS activities. - Appoints the Community Relations Officer (CRO) for the Project
	Chief Engineer – First Deputy Director of Branch	<ul style="list-style-type: none"> - Manages activities to comply with regulatory legal requirements for EHS on the course of business activities, development and implementation of plans and activities, issue of permits, licenses, and approvals, performance of industrial control and monitoring.
	Health and Safety Engineer	<ul style="list-style-type: none"> - Manages activities to ensure compliance with the safety requirements. - Undertakes control over compliance with the Health regulations and requirements. - Takes part in job attestation activities. Develop programs to improve labor environments, prevent industrial injuries and occupational diseases. - Takes part in management and performance of administrative and industrial control (3rd level). - Takes part in the Board for examination of the employees' knowledge, attestation of engineers and technicians. - Takes part in management of medical examinations for the employees. - Takes part in accident and incident investigations. - Takes part in occupational disease investigations. Issue reporting on occupational health and labor environment. - Provides initial occupational health and safety briefing. - Takes part in development of occupational health instructions. - Takes part in management of occupational health training of the Branch's employees. - Plans procurement of protective clothing. - Takes part in protective clothing distribution management. Take part in in-house auditing of the IMS. - Takes part in updating of the IMS documentation concerning Health and Safety.

Management Level	Officer	Official duties and responsibilities
	Environment Expert (Environmental Engineer)	<ul style="list-style-type: none"> - Takes part in identification of hazards and assessment of risks. - Undertakes control over compliance of the Branch's business units with the effective regulatory documents concerning Environment, the established admissible atmospheric air impact rates and water bodies, waste disposal limits. - Manages activities to collect the initial data to work out the draft of admissible impact limits - Develops Environment protection action plan for the Branch. - Coordinates actions to implement the approved plans. - Undertakes quarterly calculation of charges for negative impact on the environment. - Controls compliance with waste handling regulations. - Undertakes inspections as part of industrial environmental control. - Reports in accordance with approved governmental and corporate forms. - Takes part in planning of environmental safety regulations and requirements training for managers and employees. - Takes part in performing technical environmental protection training.
	Community Relations Officer (CRO) for the Project	<ul style="list-style-type: none"> - Provides liaison with local community - Prepares updates, distributes information to local community - Co-ordinates the social events and campaigns
	Fire Safety Engineer	<ul style="list-style-type: none"> - Develops and updates the Civil Defense Plan and Emergency Prevention and Response Plan of the Branch. - Develops and implements actions to protect employees, their family members, and inventories of the Branch against accidents and peacetime emergencies, as well as against hazards arising from or due to military operations. - Ensures preparedness to activities of civil defense authorities, forces, and resources designed for prevention of and response to emergencies, protection of the Branch's employees and inventories against hazards arising from or due to military operations. - Develops draft decrees, orders, instructions, and other documents concerning civil defense, prevention and elimination of peacetime and

Management Level	Officer	Official duties and responsibilities
		<p>wartime emergencies, agree upon the same in the established procedure.</p> <ul style="list-style-type: none"> - Manages and takes part in drills and training sessions concerning civil defense, elimination of emergency and terrorist act effects. - Takes part in management of response to accidents and emergencies at the Branch's facilities. - Monitors the condition and content of protection structures and personal protection equipment designed for life support of the employees under peacetime and wartime emergencies. - Manages development and implementation of comprehensive engineering, radiation, chemical, and medical & biological protection actions for the employees under peacetime and wartime emergencies. - Undertakes interactions with authorities, forces, and resources of the functional and regional subsystems within the unified public emergency prevention and elimination system. - Participates in management and performance of activities to declare Branch safety.
	<p>Chief Officer of Corporate Fire Fighting Service Department (CSFS)</p>	<ul style="list-style-type: none"> - Manages operations of the corporate fire fighting service department. - Undertakes inspections of the fire safety state at the Branch's facilities. - Monitors operability of the fire fighting systems. - Undertakes control over availability of the escape plans in the Branch's buildings in case of fire, availability of the required fire safety instructions at the business units. - Manages and monitors operations related to maintenance, recharging, repair and timely replacement of disabled primary fire-extinguishing means available at the Branch's facilities. - Controls the fire safety requirements in course of hot works and other fire-hazardous operations at the protected facilities of the Branch. - Develops and (or) acknowledges the fire safety instructions and other necessary administrative documents. - Develops fire-extinguishing plans, takes part in development of accident and emergency response plans at the protected facilities of the

Management Level	Officer	Official duties and responsibilities
		<p>Branch.</p> <ul style="list-style-type: none"> - Undertakes special training sessions with department employees. - Ensures execution of directions, prescriptions, and requirements from a public supervision and control authority, Occupational Health officers of the Branch, as well as remarks and suggestions from the trade union representatives responsible for occupational health.
	Chief Officer of Corporate Security Service	<p>Controls:</p> <ul style="list-style-type: none"> - Compliance with in-house and access control rules, security of the information resources and systems. - Performance of scheduled works to maintain security equipment, compliance with terms and quality when these works are performed by the contractor's personnel. - Quality of security services to protect Company's property rendered by contracted private security agencies, inter-departmental security agencies of Russia. - Operation of security equipment at the Branch's facilities. <p>Ensures:</p> <ul style="list-style-type: none"> - Implementation of training and drilling sessions with department employees following an accident response plan. - Scheduling and operation of special security activities at the Branch's facilities. - Development of unified system of actions to protect the facilities located alongside the main gas pipelines RoWs, and regulations governing implementation thereof, in accordance with the security objectives at the Branch's facilities. <p>Performs:</p> <ul style="list-style-type: none"> - Assessment of proposed designs for Branch's facilities, buildings, and structures, including installation of security equipment.

Management Level	Officer	Official duties and responsibilities
	Manager of First-Aid Medical Post	<ul style="list-style-type: none"> - Providing first medical aid to Branch employees and other assigned personnel. - Manages and implements comprehensive preventive medical actions. - Supports sanitary and epidemiologic welfare of the Branch.
	Personnel	<ul style="list-style-type: none"> - Performs work in line with Company obligations, complies with the requirements of Company's regulatory documents and IFC environmental and social standards. - Improves continuously the qualification by means of EHS training.
Technical Engineering Center (TEC) ¹	Chief Officer of Chemical and Environmental Service Department	<ul style="list-style-type: none"> - Plans department operations as per established goals, based on the first priority tasks and availability of resources required for achievement thereof. - Controls timely documenting of department work results. - Coordinates activities to develop and integrate new laboratory control methods, as well as acknowledges the relevant technical documentation. - Makes arrangements for attestation of work positions exposed to harmful physical factors, supports an extension of accreditation scope for the department in order to improve environment protection activities, establish a healthy and safe labor environment, and comply with nature protection laws.
	Environmental Laboratory	<ul style="list-style-type: none"> - Undertakes measurement of pollutant emissions from the gas compressor units and auxiliary equipment. - Implements measurements of the atmospheric air pollution levels at the boundaries between the sanitary protection zone of the Company's facilities and the nearest inhabited locations. - Perform analysis of drinking, waste, and natural water. - Performs measurements of the radiation contamination levels of areas and premises of the facilities. - Provides methodological and consulting assistance to the Company's branches in assessment of local environmental situation.

¹ ITC – is a Branch of the Company; the organization is the same as that of all the Company's Branches, though the ITC employs the personnel responsible for industrial environmental monitoring.

Appendix 32-03-06-01-04

Company's documentation specifying the type/profile of training

Training types

The Company's training types given in Table 4.1 are as follows:

Table 4.1.

Training Type / Mode	Description	Company's document specifying requirements
General provisions concerning the continuous occupational personnel education system	Description of the Company's personnel training and development (training types and modes, a procedure for planning and organization of continuous corporate education and control of personnel training management)	Company Standard Gazprom Transgaz St. Petersburg 28-04-02 Integrated Management System. Personnel Management. System of continuous professional training of personnel. General provisions.
Operations of the Training Methodological Center	Coordination of activities on continuous corporate occupational education of the Company's and Branches' personnel	Company Standard Gazprom Transgaz St. Petersburg 28-04-01 Integrated Management System. Personnel Management. Management of the Training Methodological Center activity.
Remote training procedure	Description of a training system including a computer-based learning system and a simulator center of the Dispatcher Control Department	Company Standard Gazprom Transgaz St. Petersburg 28-04-03 Integrated Management System. Personnel Management. Remote training procedure.
Procedure for organization and attestation of chief officers and professionals	Improvement of personnel's work efficiency, goal setting, and assessment of efficiency, provisions for managers and professionals to influence their own professional and career promotion within the Company	Regulations on attestation procedure for managers and professionals of Gazprom Transgaz St. Petersburg LLC
Procedure for organization and implementation of technical training at the Company's Branches	Professional development of workforce, expansion of process plant maintenance and HSE knowledge, improvement of operational quality, improvement of personnel interactions as well as personnel training for annual	Company Standard Gazprom Transgaz St. Petersburg 16-01 Integrated Management System. Procedure for organization and implementation of technical training at the Company's Branches of Gazprom Transgaz

Training Type / Mode	Description	Company's document specifying requirements
	examinations of occupational health knowledge	St. Petersburg LLC
Procedure for of the Company's employees in Occupational Health and Industrial Safety	Training of the Company's Employees in Occupational Health and Industrial Safety	Manual on Environmental management system, Occupational Health and Industrial Safety of Gazprom Transgaz St. Petersburg LLC
Procedure for Corporate Security personnel training	Health and safety briefing and training programs. List of instructions applicable to security department activity	Initial briefing program on health and safety for the security guard and senior security guard. Training program on health and safety for the security guards and senior security guards. List of valid instructions, programs on occupational health, fire safety, electrical safety for the employees of Second Regional squad of "North-West Interregional Security Office of OAO "Gazprom" in Saint-Petersburg" Branch of OAO "Gazprom" Instruction on procedure of charging (discharging) of duty weapons in "North-West Interregional Security Office of OAO "Gazprom" in Saint-Petersburg" Branch of OAO "Gazprom"
Procedure for informing the Company's employees of actual or potential hazards and risks	Description of procedure of informing Company's employees to ensure their awareness of actual or potential Health and Safety hazards and risks of their work, as well as providing general information on hygiene and prevention of transmissible diseases	Company Standard Gazprom Transgaz St. Petersburg 11-01 Integrated Management System. System of hazards identification and risk assessment as regards Occupational Health and Industrial Safety Annual directives "On preventive measures arrangement" from Deputy head of security management department of "North-West Interregional Security Office of "Gazprom" Public Company in Saint-Petersburg" , as well as a reminder summary sheets (these reminders are printed during epidemic

Training Type / Mode	Description	Company's document specifying requirements
		periods, and placed at the health and safety information boards, and distributed to the branch departments)
Procedure for informing the Company's employees of EI and IEI	Description of procedure of informing Company's employees to ensure their awareness of environmental issues (EI) and important environmental issues (IEI) from industrial activities	<p>Company Standard Gazprom Transgaz St. Petersburg 32-04-03 Integrated Management System. Documents and records management system.</p> <p>Company Standard Gazprom 12-1-019. Environment Protection. Planning. Procedure of environmental issues identification.</p>

Appendix 32-03-06-01-05

Physical impacts management plan

1 Goal

A goal of the Physical Impact Management Plan is to reduce basic parametrical contamination of the environment to admissible levels (noise, electromagnetic fields, vibration impacts), which arise from operation of the Project facilities and affect adversely the personnel, local communities and fauna species in the area under consideration.

The Physical Impacts Management Plan should be examined jointly with other Plans of the Company:

- Environmental Management Plan.
- Plan of consultations with public and information disclosure plan
- Emissions Management Plan

2 Statutory and other requirements

The Physical Impacts Management Plan has been developed in compliance with the following documents:

- GOST 12.1003-83 "Noise. General Safety Requirements";
- SanPiN 2.2.4.1191-03 "Physical Factors of Industrial Environment. Electromagnetic Fields under Industrial Conditions";
- SN 2.2.4/2.1.8.562-96 "Noise at Workplaces, in Rooms of Residential, Public Buildings and Housing Development Areas";
- IFC Performance Standard 3 "Rational Use of Resources and Environmental Pollution Prevention";
- EHS Guidelines . IFC EHS General Guidelines;

A purpose of applying IFC PS 3 to the Project is to prevent or minimize adverse impacts on the human health and environment.

Throughout the lifecycle of the Project, the Company considers the external conditions and prevents contamination of environment, whenever possible, and manages the processes and methods, which help best of all to avoid or, where prevention is impossible, to minimize adverse impacts to human health and environment, under condition of technical and financial feasibility. The principles and methods applicable throughout the lifecycle of the Project are developed with taking in consideration the potential risk factors.

In order to prevent adverse impacts of the Project on the original environment status, the Company is required to consider the relevant factors including:

- existing environmental conditions;
- self-restoring capacity of environment with regard for necessity not to exceed the admissible environment quality limits;
- existing and planned land use;
- proximity of the Project to the areas that are important for biodiversity preservation.

3 Review of potential adverse physical impacts

During the operation period of CS «Portovaya» and linear section of North European gas pipeline from Volkhovskaya CS to Portovaya Bay, there are two types of physical impact to the environment to be observed:

- noise impact;
- electromagnetic impact.

3.1 Noise impact

In the course of operation, the linear part of North European gas pipeline will not cause any significant environmental noise impact, since there is no equipment that can be a source of intensive noise, except possible **occasional** process discharges of gas through the special vents, which in most cases are caused by necessity to perform planned inspections and repair works, and also use of machinery for maintenance and repair works at the RoW.

A primary source of intensive noise that can extend both to the gas transport facility premises and areas, and to the nearby residential construction areas, is a gas pipeline compressor station equipped with powerful gas turbine units.

During operation period, the CS activity is accompanied with noise generated by equipment with high pressure natural gas as a working medium. The prevalent noise sources at the CS are as follows:

- gas transportation preparation complex (GRPC);
- gas pumping units;
- gas cooling units;
- power plants for own needs;
- stationary unit for thermal treatment – incineration plant (SUTO).

The above-mentioned noise sources are operating continuously throughout a year.

In addition to the above-mentioned sources, the CS produces **regularly** a scheduled process gas discharges through special vent stacks, which in most cases associated with need of scheduled inspections and repairs (GPU startups and shutdowns, CS equipment repair and maintenance shutdowns, etc).

Such discharges are performed at high velocity of gas and accompanied by considerable acoustic energy outbreak. However, it should be noted that the above-mentioned noise sources operate for a short time, from several seconds to several minutes. Such emissions take place only during a daytime, and are of a blowout type, i.e. are not continuous noise source. In order to reduce the acoustic power levels of such sources, they are provided with noise suppressors.

All these emissions at CS take place under a maintenance procedure and do not coincide in time.

Since these emissions take place under a scheduled procedure, they occur only during a daytime. No scheduled equipment shutdowns at the CS and linear section of gas pipeline take place during night time and on weekends.

3.2 Electromagnetic Impacts

Main sources of electromagnetic emissions at CS «Portovaya» are:

- satellite communication station;
- radio relay communication link;
- personal computers.

A primary factor of impacts from satellite communication station equipment on the living conditions of people are electromagnetic emissions of radio frequency range.

The electromagnetic fields generated by CS «Portovaya» sources are of low intensity (do not exceed 140 mcV/cm^2), which is much lower than WHO standard (1000 mcV/cm^2). Therefore, these impacts are negligible. Outside the CS limits, no sources of electromagnetic interference are observed.

There are no sources of electromagnetic emissions on the right-of-way of North European gas pipeline.

3.3 Vibration Impacts

There are no vibration impacts at operation of CS Portovaya equipment and right-of-way of the North European gas pipeline.

4 Control and monitoring

Table 5.1 presents findings concerning potential environmental impacts relating to noise and electromagnetic fields along with actions towards prevention or mitigation of such effects.

Table 5.1.

Physical impacts management plan

Type of impact and potential influence	Actions towards mitigation and control (design feature / specific action)	Monitoring	Monitoring frequency	Responsible in the Branch
Noise impact of the CS on local communities	Notify people that can be present within the noise impact zone of a potential adverse impact and a duration of such impact.	Interview	Once per year	Environment Protection Engineer
	Limit or prohibit any work accompanied with noise impact during a nighttime (23:00 – 7:00)	Inspection	Once per three months	Chief Engineer
	Limit operation of the motor vehicles with increased noise characteristics.	Inspection	Once per three months	Transportation service department
	Maintain the motor vehicles and plant in good condition in order to reduce the noise.	Inspection	Under maintenance schedule	Transportation service department
	Maintain the noise suppressors at motor vehicles and plant in good order.	Inspection	Under maintenance schedule	Transportation service department
Electromagnetic emissions Electromagnetic field impacts on people and animals	Take steps to eliminate a notable impact on people from electric discharges and leaking currents in cases of contact with properties isolated from the ground, i.e. large-size items, machines and mechanisms.	Inspection	Continuously	HS Engineer Communication service department

In order to evaluate the noise impact level of CS «Portovaya» facility on the environment and human living conditions, and determine if special actions to reduce the noise levels are needed, the noise impact levels shall be controlled.

This type of control should be implemented at 4 (four) monitoring points (at the sanitary protection zone boundary of CS «Portovaya» and in the residential area (Settlement of Bolshoy Bor) once in three months by a testing laboratory accredited as per established procedure (Table 5.2)).

Table 5.2.

Noise level control in sanitary protection zone (SPZ) of Portovaya CS

Facility	Monitoring point location	Measurement time	Control frequency	RD basis	Control method
Portovaya CS	Control Point 1: border of sanitary-protection area, 920 m to the north from CS site	Daytime (7:00 – 23:00), nighttime (23:00 – 7:00)	Once per three months	Sanitary Code 2.2.4/2.1.8.56 2-96	Instrumental
Portovaya CS	Control Point 2: border of sanitary-protection area, 970 m to the east from CS site	Daytime (7:00 – 23:00), nighttime (23:00 – 7:00)	Once per three months	Sanitary Code 2.2.4/2.1.8.56 2-96	
Portovaya CS	Control Point 3: border of sanitary-protection area, 990 m to the south from CS site	Daytime (7:00 – 23:00), nighttime (23:00 – 7:00)	Once per three months	Sanitary Code 2.2.4/2.1.8.56 2-96	
Portovaya CS	Control Point 4: border of sanitary-protection area, 1000 m to the west from CS site	Daytime (7:00 – 23:00), nighttime (23:00 – 7:00)	Once per three months	Sanitary Code 2.2.4/2.1.8.56 2-96	
Residential housing area	Control Point 5: border of Bolshoy Bor Settlement, 3380 m to south-east from CS site	Daytime (7:00 – 23:00), nighttime (23:00 – 7:00)	Once per three months	Sanitary Code 2.2.4/2.1.8.56 2-96	

The layout scheme of noise level control points (CP) within Sanitary Protection zone of CS «Portovaya» is given in figure 5.3.



Figure 5.3.
The layout scheme of noise level control points within the Sanitary protection zone of CS
"Portovaya". Scale 1:50000

Appendix 32-03-06-01-06

Waste management plan

1 Purpose

A purpose of the Waste Management Plan is to collect information on waste generated as a result of operation of CS Portovaya and linear section of North European gas pipeline from CS Volkhovskaya to Portovaya Bay, and information on waste handling to minimize waste impact on human health and environment. Waste management plan should be reviewed on a regular basis (following the PNOOLR updates) to verify that mitigation measures remain in force.

The Waste Management Plan should be considered in combination with other Plans of the Company:

- Atmospheric Emission Management Plan.
- Water Resources Management Plan.
- Hazardous Materials Management Plan.

2 Statutory and other requirements

The Waste Management Plan has been developed in compliance with IFC Performance Standard 3 "Rational Resources use and environmental pollution prevention".

According to the requirements of the above standard, the Company shall prevent waste generation. Should this be impossible, the Company shall ensure reduction of waste generation, waste processing and reuse without causing damage to human health and environment.

In case the processing and reuse of waste is not possible, the Company shall ensure waste processing, destruction, or disposal by environmentally safe methods, including implementation of proper measures for atmospheric emission control and control of remaining materials generated as a result of waste treatment or processing at the Company facility.

When hazardous waste disposal is performed by third parties, the Company shall subcontract lawfully established reputable organizations which have necessary licenses issued by authorized bodies and also receive all documentation on waste transfer up to the final point of destination. The Company shall make sure that licensed waste landfills are used in compliance with acceptable standards, and if this is so, use such landfills. Otherwise the Company shall reduce the volume of waste send to waste landfills and consider alternative options of waste disposal up to and including possible construction of Company owned facilities for waste recycling and disposal on the Project site.

3 Handling of waste generated in the process of CS Portovaya operation

Waste handling includes activities on regulation of waste related works: waste accumulation, collection, disposal, elimination, neutralization, transportation, storage, landfilling, and destruction, as well as prevention and minimization accounting and control of waste generation.

Waste handling at Portovoye, Severnoye and Volkhovskoye branches is performed in compliance with the requirements of RF Environmental Law, as well as the corporate requirements of the Company (Gazprom transgaz Saint-Petersburg STO 32-03-04 Industrial and household waste. Handling procedure)

According to the PNOOLR in effect for the CS Portovaya site, there are 42 types of waste (hazard class 1-5) generated as a result of the station operating activity.

All waste is currently accumulated in the area of the CS Portovaya site (7 locations for waste accumulation are arranged) for further transfer to licensed contractors for utilization, neutralization or landfilling. Part of generated waste is handed over to the third parties without intermediate storage (silicagel, ceramic balls, slug from cleaning of POL reservoirs and etc.).

The description of locations for temporary accumulation of waste and waste accumulation conditions are given in table 6.1.

The layout of locations for waste accumulation is shown in figure 6.2.

A list of waste and waste generating activities, waste generation norms, and waste handling actions are given in the Waste Management Plan (table 6.3).

There is no collection, accumulation, disposal, treatment, neutralization, storage, or landfilling of waste generated by third party organizations and persons in the area of CS Portovaya.

The PNOOLR has been developed for CS Portovaya, which is valid until February 26, 2019. PNOOLR update is expected in 2018. The new PNOOLR will include the liquid wastes disposed in the Stationary thermal destruction unit (STDU).

Stationary thermal destruction unit (STDU)

STDU is intended for environmentally safe thermal neutralization and incineration of solid household and industrial waste generated in the process of CS Portovaya operation.

STDU is equipment consisting of two KTO-1000.BM.KSZh-type systems for thermal treatment of liquid waste and one KTO-50.K40-type system for thermal treatment of solid household and industrial waste and oil slurries.

According to the state ecological expertise opinion the KTO-1000.BM.KSZh system receives process water for further incineration (neutralization), and KTO-50.K40 system receives solid domestic waste also for further neutralization.

Table 6.1.

Characteristic of CS Portovaya waste accumulation points

WAP Inv. No.	Description of Waste Accumulated in WAP	Description of Place of waste accumulation (WAP)	Waste Accumulation Method	Frequency of Waste Removal	Waste Accumulation Limit, T	Branch "Portovoye" Department Responsible for WAP
1	Waste of mercury, mercury quartz, fluorescent lamps	Manufacturer's carton boxes located in utility space (concrete floor, self-ventilation, doors fitted with locks)	In close container, separate storage (carton boxes)	As transfer quantity is built up	0.242 (1527 pcs.)	Power and Water supply Department (PWSD)
2	Waste of mercury-filled thermometers	Carton located in utility space (concrete floor, self-ventilation, doors fitted with locks)	In close container, separate storage (carton boxes)	Annually	0.001	PWSD
	Undamaged used lead batteries with electrolyte	Utility space (concrete floor, self-ventilation, doors fitted with locks)	In bulk, separate storage	As transfer quantity is built up	1.952	PWSD
	Waste of mineral hydraulic oils, halogen-free	Underground tank cap. 25 m ³	Mixed in close container (metal)	Quarterly (provided)	14.419	Gas Compression Service (GCS)

WAP Inv. No.	Description of Waste Accumulated in WAP	Description of Place of waste accumulation (WAP)	Waste Accumulation Method	Frequency of Waste Removal	Waste Accumulation Limit, T	Branch "Portovoye" Department Responsible for WAP
3	Waste of mineral engine oils		tank)	transfer quantity is built up)		
	Waste of mineral industrial oils					
	Waste of mineral compressor oils					
	Waste of mineral turbine oils					
4	Containers from ferrous metal polluted with paintwork materials (content 5% and higher)	Metal containers with cover, cap. 0.75 m ³ (6 ea.), cap. 1 m ³ (2 ea.) and cap. 0.25 m ³ (1 ea.), installed at asphalt area	Mixed in close container (metal container)	As transfer quantity is built up	1.866 (3.715 m ³)	GCS
	Unsorted waste from offices and personnel facilities of organizations (except bulk waste)					
	Low-hazard sweepings from facility grounds					
	Oil- or oil products-soaked					

WAP Inv. No.	Description of Waste Accumulated in WAP	Description of Place of waste accumulation (WAP)	Waste Accumulation Method	Frequency of Waste Removal	Waste Accumulation Limit, T	Branch "Portovoye" Department Responsible for WAP
	wiping rags (oil or oil products content less than 15 %)					
	Sludge (silts) from biological treatment plants for household and combined sewage (Mix of sediments and waste sludge from biological treatment plants for household sewage)					
	Waste (sludge) from cleaning networks, sewage wells of household and combined sewer					
	Non-contaminated activated carbon used during air and gases drying					
	Non-contaminated sand waste					

WAP Inv. No.	Description of Waste Accumulated in WAP	Description of Place of waste accumulation (WAP)	Waste Accumulation Method	Frequency of Waste Removal	Waste Accumulation Limit, T	Branch "Portovoye" Department Responsible for WAP
	Used abrasive disks, waste of used abrasive disks					
	Ion exchange resins used during water conditioning					
5	Waste from natural, oil and associated gas cleaning (mineral sludge from transmitted gas cleaning in dust separators and from gas pipelines cleaning) Waste of natural, oil and associated gas cleaning from moisture, oil and mechanical particles (oil products content 15 % and higher)	Metal containers with cover, cap. 0.75 m ³ (2 ea.), cap. 1 m ³ (2 ea.) and cap. 0.25 m ³ (1 ea.), installed at asphalt area	Mixed in close container (metal container)	As transfer quantity is built up	0.931 (2.165 m ³)	GPTC Gas Transportation Preparation Complex (GTPC)
	Sorbents contaminated with oil products (used peat and/or sphagnum moss					

WAP Inv. No.	Description of Waste Accumulated in WAP	Description of Place of waste accumulation (WAP)	Waste Accumulation Method	Frequency of Waste Removal	Waste Accumulation Limit, T	Branch "Portovoye" Department Responsible for WAP
	sorbents) (oil products content less than 15%)					
	Used oil filters of power generation units (oil products content less than 15%)					
	Used air filters of power generation units (oil products content less than 15%)					
	Used gas filters from cleaning fuel, start-up and impulse gases from liquids and solids					
	Used glass fiber filters for inlet air of gas pumping units					
	Containers from various polymer materials polluted with non-organic insoluble					

WAP Inv. No.	Description of Waste Accumulated in WAP	Description of Place of waste accumulation (WAP)	Waste Accumulation Method	Frequency of Waste Removal	Waste Accumulation Limit, T	Branch "Portovoye" Department Responsible for WAP
	or partially soluble mineral substances					
	Dust (powder) from ferrous metals grinding, with metal content 50% and higher					
	Waste of textiles polluted by paint and varnish materials (content less than 5%)					
	Waste of vermiculite polluted by oil and oil products					
6		2 metal tanks cap. 200 m ³	In close container, separate storage	Twice a month	275.000	Gas Preparation Transportation

WAP Inv. No.	Description of Waste Accumulated in WAP	Description of Place of waste accumulation (WAP)	Waste Accumulation Method	Frequency of Waste Removal	Waste Accumulation Limit, T	Branch "Portovoye" Department Responsible for WAP
	Process water at stabilization of unstable condensate by separation	each	(metal tank)			Complex (GPTC)
7	Waste of ethylene glycol base antifreezes	Underground tank cap. 3 m ³	In close container, separate storage (metal tank)	Twice a month	2.395	PWSD
Wastes removed without WAP arrangement:						
Sludge from tanks and pipelines cleaning of oil and oil products						
Other used oil product mixes (sludge from cleaning of storage and transportation tanks of stable gas condensate)						
Waste from cleaning of equipment for transportation, storage and treatment of gas, gas condensate and oil-gas condensate mixture.						
Waste of mineral transformer oils, halogen-free						
As generated						
-						

WAP Inv. No.	Description of Waste Accumulated in WAP	Description of Place of waste accumulation (WAP)	Waste Accumulation Method	Frequency of Waste Removal	Waste Accumulation Limit, T	Branch "Portovoye" Department Responsible for WAP
	Used alumina balls from air and gas drying, not contaminated by hazard substances					
	Waste (sludge) from cesspits					
	Low hazard sludge from storm water sewer treatment facilities					
	Low hazard sludge from sand separators during domestic wastewater treatment					
	Non-contaminated silica gel used during air and gas drying					
	Floated oil products from oil separators and similar facilities					

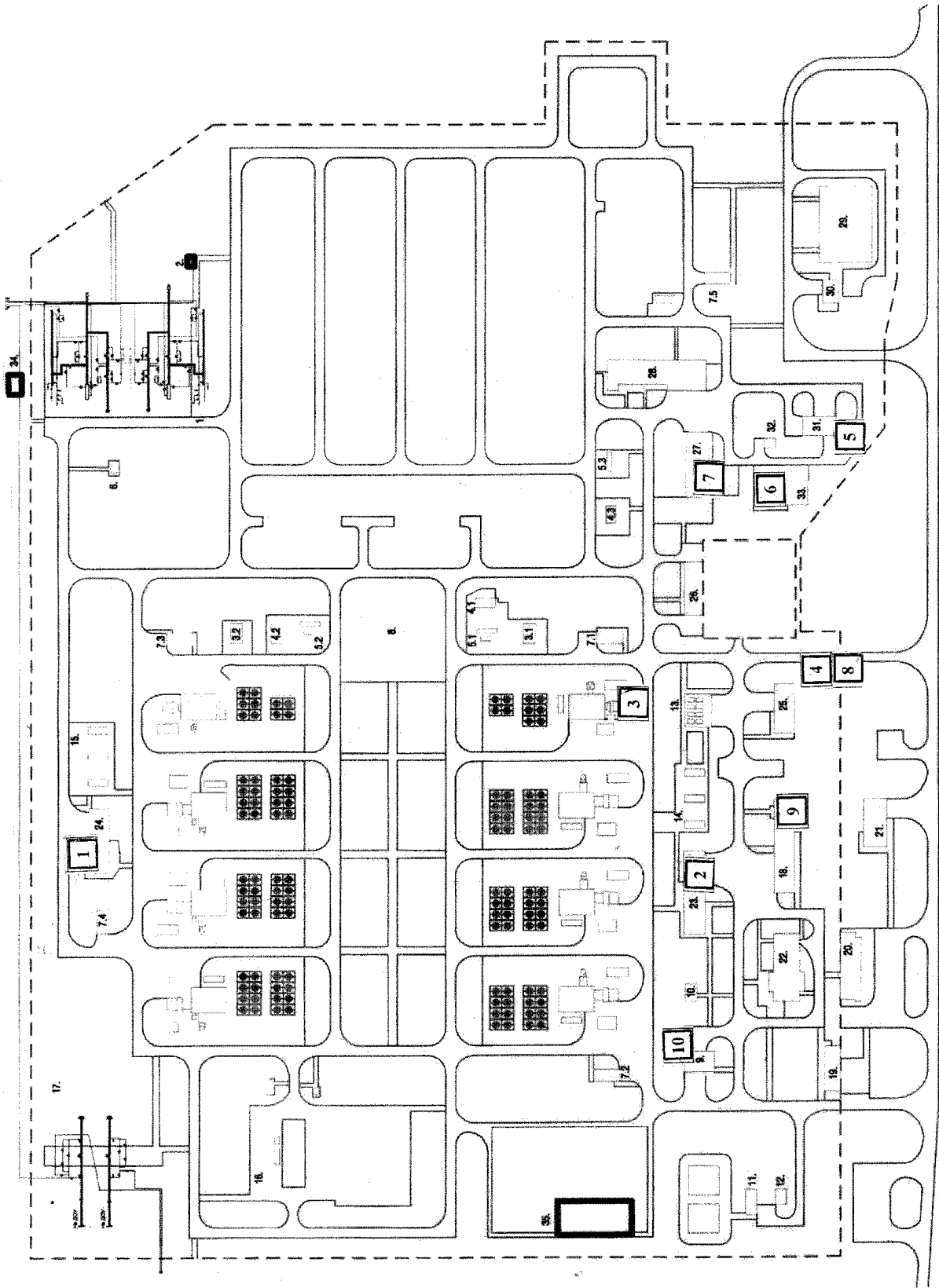


Figure 6.2.

Layout of locations for waste accumulation (WAP) of Portovaya CS

4 Management and monitoring

The Waste Management Plan is given in table 6.3.

Table 6.3.

CS Portovaya Waste Management Plan

Waste Class of Hazard	Waste Description	Waste Generation Norm, T/year	Waste Generating Activity	Waste Treatment
I	Waste of mercury, mercury quartz, fluorescent lamps	0.483	Replacement of used fluorescent lamps	decontamination
	Waste of mercury-filled thermometers	0.001	Replacement of used ртутных термометров	decontamination
Total for hazard Class I (2 types of waste):		0.484 T/year		
II	Undamaged used lead batteries with electrolyte	3.903	Replacement of used batteries during Emergency Diesel power station, PPON maintenance	Salvage / disposal
Total for hazard Class II (1 type of waste):		3.903 T/year		
	Waste from cleaning of natural, oil and associated gas from moisture, oil and mechanical particles (oil products content)	4.960	Fuel Gas System Station Gas preparation transportation plant (GPTP) equipment cleaning of sludge	disposal

Waste Class of Hazard	Waste Description	Waste Generation Norm, T/year	Waste Generating Activity	Waste Treatment
III	15 % and higher)			
	Iron containers polluted with paintwork materials (content 5% and higher)	0.191	Application of paint, varnish, primer, solvent and enamel	disposal
	Waste of ethylene glycol based antifreezes	57.490	Replacement of used antifreeze in Emergency Diesel power station and PPOH cooling systems	decontamination
	Sludge from tanks and pipelines cleaning of oil and oil products	0.122	Diesel fuel storage tanks cleaning	decontamination
	Other used oil product mixes (sludge from cleaning of storage and transportation tanks of stable gas condensate)	18.975	Stable condensate storage tanks cleaning	disposal
	Process water at stabilization of unstable condensate by separation	6600.000	Separation of unstable condensate at condensate stabilization unit	Incineration at Waste Thermal Treatment Unit KTO-1000.BM.KSZh.
	Waste of mineral engine oils	15.301	Oil replacement in GPU, ED, PPOH lubrication systems	decontamination

Waste Class of Hazard	Waste Description	Waste Generation Norm, T/year	Waste Generating Activity	Waste Treatment
III	Waste of mineral industrial oils	0.040	Used industrial oil replacement in lubrication systems of turning lathe and vertically oriented drill	decontamination
	Waste of mineral compressor oils	0.146	Used oil replacement in compressors' crankcases	decontamination
	Waste of mineral transformer oils, halogen-free	9.736	Transformers' maintenance	disposal
	Waste of mineral turbine oils	39.690	Used turbine oil replacement in GPU	decontamination
	Floated oil products from oil separators and similar facilities	299.667	Oil tank cleaning at treatment facilities	decontamination
	Waste of mineral hydraulic oils, halogen-free	2.498	Used oil replacement in lubrication systems of shutoff valves actuators	decontamination
	Total for hazard Class III (13 types of waste):	7048.816 T/year		
	Unsorted waste from offices and personnel facilities of organizations (except bulk waste)	39.710	Personnel daily activities and cleaning of facility premises	disposal

Waste Class of Hazard	Waste Description	Waste Generation Norm, T/year	Waste Generating Activity	Waste Treatment
IV	Low-hazard sweepings from facility grounds	624.755	Cleaning of facility grounds	disposal
	Oil- or oil products-soaked wiping rags (oil content less than 15 %)	1.329	Wiping of oily surfaces	disposal
	Other waste of sorbents (used peat sorbent) oil content less than 15%)			
	Waste of sorbents contaminated by oil products (used peat and/or sphagnum moss sorbent) (oil products content less than 15%)	1.279	Oil spillage recovery	disposal
	Waste from cleaning of equipment for transportation, storage and treatment of gas, gas condensate and oil-gas condensate mixture	19.000	GPU drain tanks cleaning	disposal
		35,519	Used oil filters replacement	decontamination

Waste Class of Hazard	Waste Description	Waste Generation Norm, T/year	Waste Generating Activity	Waste Treatment
IV	Used air filters of power generation units (oil products content less than 15%)		in equipment of GPU, ED and PPON, nitrogen plant, compressed air station; cartridge replacement in oil purifier. Used air filters replacement in equipment of GPU, ED and PPON, nitrogen plant, compressed air station	
	Used filters from gas cleaning from liquids and solids at treatment of fuel, start-up and impulse gases	0.393	Used dried gas filters replacement in GPU and GPF equipment. Used filters replacement in GPTC equipment	disposal
	Glass fiber used filters for inlet air of gas pumping units	0,24	Replacement of used dry gas filters in GPU and GPP	
	Waste of packaging and packing materials of polyethylene, polluted with non-organic matters Containers from various polymer materials polluted with	1.370	Damage of plastic containers for antifreeze and GPU gas turbine engine cleaner	disposal

Waste Class of Hazard	Waste Description	Waste Generation Norm, T/year	Waste Generating Activity	Waste Treatment
	non-organic insoluble or partially soluble mineral substances			
	Used alumina balls from air and gas drying, not contaminated by hazardous substances	115.000	Replacement of used ceramic balls of alumina in adsorbtion towers	disposal
	Dust (powder) from ferrous metals grinding, with metal content 50% and higher	0.080	Processing of metals at rough grinding machine	disposal
	Waste of textiles polluted by oil-base paints, varnishes, resins and various polymer materials (textile polluted with paintwork materials (content less than 5%))	0.268	Cleaning (by wiping rag) of surfaces polluted by paintwork materials	disposal
	Waste (settlings) from cesspits	0.075	Cesspits cleaning	decontamination
	Sludge (silts) from biological treatment plants for household and combined sewage (Mix of sediments and waste sludge from biological treatment plants for household sewage)	5.304	Maintenance of treatment facilities for household sewage	disposal

Waste Class of Hazard	Waste Description	Waste Generation Norm, T/year	Waste Generating Activity	Waste Treatment
IV	<i>Low hazard sludge from storm water sewer treatment facilities</i>	67.752	Maintenance of storm water treatment facilities	disposal
	Sludge from sand separators during domestic wastewater treatment	549.478	Maintenance of drainage water treatment facilities	disposal
	Waste (sludge) from cleaning networks, sewage wells of household sewerage and combined sewer	5.100	Cleaning of sewage wells	disposal
	Waste of vermiculite polluted by oil and oil products (oil content less than 15%)	3.530	Maintenance of storm and drainage water treatment facilities	decontamination
	Medical waste	0.032	Medical station activities	disposal
	Total for hazard Class IV (17 types of waste)		1470.976 T/year	
V	Non-contaminated activated carbon used during air and gases drying	2.000	Maintenance of treatment facilities and potable water treatment plant	disposal
	Non-contaminated sand waste	2.500	Maintenance of treatment facilities and potable water treatment plant	disposal

Waste Class of Hazard	Waste Description	Waste Generation Norm, T/year	Waste Generating Activity	Waste Treatment
V	Used abrasive disks, waste of used abrasive disks	0.012	Replacement of used abrasive disks	disposal
	Ion exchange resins used during water conditioning	0.120	Replacement of used ion exchange resin during water conditioning in boiler-house	disposal
	Non-contaminated silica gel used during air and gas drying	532.500	Replacement of used silica gel in adsorbers	decontamination
Total for hazard Class V (5 types of waste):		537.132 T/year		
TOTAL:		9 061.311 T/year		
*Licensed organizations are subject to change based on tender results.				

Activities aimed at mitigation of possible negative impact from generated waste on environment and human health shall be performed at the Project facilities.

Such activities include:

- reduction (minimization) of waste generation quantities;
- safe accumulation of waste;
- safe transfer of waste to specialized licensed contractors implementing waste collection, utilization, neutralization, transportation, and disposal activities.

Minimization of waste generation quantity will be achieved through careful selection of materials at the stage of procurement, assessment of wastes from the viewpoint of their possible future recycling and availability of organizations (landfills) capable to perform the particular type of waste handling, as well as application of high technology equipment:

- an thermal destruction unit of KTO-50.K.40 type is provided for incineration of certain waste generated in the process of operation of main and auxiliary equipment at CS “Pikalevskaya”, CS “Volkhovskaya”, CS “Elizavetinskaya” and CS “Portovaya”;
- two liquid waste thermal destruction units of KTO-1000.BM.KSZh are provided for incineration of liquid waste from GTPP at CS “Portovaya”.

Thermal treatment (incineration) will allow to reduce the initial volume of waste by 90 to 95%.

Refer to Appendix 7 – Atmospheric emission MP i.4.1 Main sources of pollutant emissions.

Safety of waste accumulation will be achieved through application of the following measures and means:

- Restriction of unauthorized access to the places of hazardous waste accumulation.
- Secondary containment and (or) closed drainage systems in the locations of hazardous and liquid waste accumulation. In case the amount of liquid waste is greater than 220 L, the available secondary containment should be at least 110% of the largest storage container or 25% of the total storage capacity (whichever is greatest), in accordance with IFC requirements.
- Sufficient spill response material is available in the waste accumulation places and an emergency response procedure is in place.
- Adequate training is provided for personnel responsible for hazardous waste management.
- Separate accumulation of hazardous waste.

- Regular checks to ensure the compliance with the requirements set for waste accumulation places.
- Clear labelling of waste accumulation places .
- In case of necessity to temporary accumulate the waste with volatile content on site, it should be accumulated in a closed and ventilated area.
- Waste will be accumulated in sealed tanks and containers prior to removal to third party contractors.
- Open locations of waste accumulation will be covered with a firm concrete blanket which excludes pollution of soil and ground waters.
- An employee of a relevant department of "Portovoye", "Severnoye" or "Volkhovskoye" branches responsible for organization and maintenance of each location of temporary waste storage is appointed.
- Sorting and separate accumulation of waste performed with due regard to physical and chemical properties, state of matter, and class of hazard of such waste.
- Roads on the industrial sites of the Project facilities covered with firm coatings resistant to petroleum products impact.

Safety of waste transfer to third party contractors is achieved as follows:

- Waste transportation will be arranged by using methods which exclude the possibility of waste loss in the process of transportation, creation of emergency situation, damage to the environment, human health, business and other facilities.
- The emergency response procedures in case of accidents during transportation and transfer of waste are provided in the waste management instruction of the Branches.
- All works associated with waste loading, transportation, and unloading will be mechanized and performed in hermetically sealed spaces.

Along with environmental measures, organizational measures shall be implemented which shall be aimed at mitigation of the impact of waste being generated on the environment and human health, the most important measure is the industrial environmental control (IEC) of waste handling. Waste tracking system is incorporated, including the requirement to verify the amount of waste transferred and the amount of waste received at handling facilities/final disposal (the transportation contractor is providing the supporting documents upon Company's request). Moreover, the control system also requires the record-keeping of wastes transferred to the third parties, in accordance with RF legislation.

Industrial environmental control (IEC) of waste handling includes:

- Coordination and control of the activity on organization of work in the field of waste handling, including arrangement of waste accumulation places, implementation of waste accumulation procedure and waste generation accounting, waste transportation to the final disposal locations to specialized contractors engaged in waste disposal, neutralization, and utilization.

- the audit of documentation of the waste disposal contractor is performed by the Company prior to sign the contract for waste removal, at the stage of bidding procedure (tender). The waste removal contractor in its turn, performs the audits of third parties to ensure that waste handling is performed in accordance with the requirements of Russian legislation and IFC. The organizations implementing waste handling activities for the Project have licenses to perform waste management and are audited by federal environmental and sanitary inspectorates.

- Carrying out of IEC performance in the field of waste handling by computational (primary accounting of waste generation, issuance of corporate and state reporting forms) and visual (control of compliance with waste accumulation requirements) methods.

IEC in the field of waste handling at "Portovoye", "Severnoye", "Volkhovskoye" branches is performed in compliance with the requirements of:

- Gazprom STO 2-1.19-275-2008 Environmental protection at JSC "Gazprom" enterprises. Industrial environmental control. General requirements.

- Gazprom STO 2-1.19-416-2010 Environmental protection at JSC "Gazprom" enterprises". Industrial environmental control in the field of waste handling. Organization and operation procedure.

- Gazprom Transgas Saint-Petersburg STO 32-03-01-2012 Integrated Management System. Industrial environmental control. Procedure.

Appendix 32-03-06-01-07

Atmospheric emission management plan

1 Purposes

Purposes of the Atmospheric Emission Management Plan are as follows:

- organization of management of pollutant atmospheric emissions from the operating activity of CS "Portovaya" and **linear section of** the North European Gas Pipeline from CS "Volkhovskaya" to the Portovaya Bay to the level that has a minimum impact on the environment and human health;
- optimization of equipment operation to reduce greenhouse gases emissions.

The Atmospheric Emission Management Plan should be considered in combination with other Plans of the Company:

- Waste Management Plan.
- Hazardous Materials Management Plan.
- Industrial Environmental Monitoring Plan.

2 Statutory and other requirements

The Atmospheric Emission Management Plan has been developed in compliance with IFC Performance Standard 3 "Rational Resources use and environment pollution prevention".

According to requirements of the above standard, the Company is required to prevent a possible negative impact on atmospheric air, and in case it is not possible, seek to mitigate such impact.

In the process of project development and implementation, the Company shall consider alternative possibilities and implement cost effective and technically and financially feasible options aimed at reduction of emission of project related greenhouse gases into the atmosphere. These options may contemplate the review of alternative areas for the project implementation, utilization of renewable or low-carbon energy sources, reduction of fugitive hazardous emissions into the atmosphere, and reduction of gas flaring volumes.

With respect to projects which generate or are expected to generate polluting emissions into the atmosphere in an annual volume of above 25 thousand tons of carbon dioxide equivalent, the Company shall estimate the volumes of direct emissions from facilities owned or controlled by the Company and located within the boundaries of the project site, as well as the volumes of indirect emissions associated with production of energy consumed by the project and generated by facilities located beyond the site boundaries.

The estimation of greenhouse gas emission volumes shall be performed on an annual basis in compliance with internationally recognized methods and best practices.

3 Overview of negative impact of CS “ Portovaya” and linear section of North European gas pipeline from CS “Volkhovskaya” to the Portovaya Bay on atmospheric air

3.1 Main sources of pollutant emissions

The majority of pollutant emissions into the atmosphere occur as a result of operation of the following process equipment of CS “ Portovaya”.

– **CS–gas pipeline connection unit with pipe internal gauge (PIG) receivers.** Emissions from CS piping are performed 5 times a year through special stacks located on the connection unit. The connection unit is combined with PIG receivers for cleaning and diagnostics of pipelines. Gas emissions in the process of PIG receipt occur at PIG removal, degassing of the gathering pipeline, and upon condensate disposal from the gathering pipeline.

All natural gas emissions from the receiver are of major blowout nature and not simultaneous. The pipeline cleaning process is performed 5 times per year. Gas emitted into the atmosphere is *methane*.

Transport Gas Treatment plant (GTPP) is where gas is cleaned, heated, reduced, and measured. *Methane* emissions from GTPP equipment are performed 4 times a year through two stacks located beyond the boundaries of the GTPP site. In addition, natural gas emission is performed through the same stacks in the process of preventive maintenance (once a year) and through the stacks of fuel gas knock out drums (twice a year); the gas emitted into the atmosphere is *methane*.

The following gases are emitted into the atmosphere in the process of exhaust gases discharge from gas regeneration heaters, heat-carrying fluid heaters, a low-pressure furnace for burning of condensate stabilization unit gases: *nitrogen dioxide, nitrogen (II) oxide, carbon monoxide*.

The general flow chart of GTPP is shown in Figure 4.1.

– **Compressor departments No.1 and No.2** where 8 gas pumping units (GPU) are installed performing compression of natural gas. Emissions of combustion products are performed continuously through smoke pipes. GPU emissions contain: *nitrogen dioxide, nitrogen (II) oxide, carbon monoxide*.

Continuous emissions during the heating season also occur in the process of operation of heating units intended for heating of individual GPU shelters in cold season. One heating unit is installed for each GPU. Gases emitted into the atmosphere are *nitrogen dioxide, nitrogen (II)*

oxide, carbon monoxide, benzopyrene. When the heaters are shut down for inspection and repair, fuel gas is bled off from the burners. *Methane* is emitted into the air.

When GPU are started and shut down for performance of scheduled maintenance (repair), *methane* is emitted through outgassing and purge stacks from the GPS blower circuit. One group of individual ACU is installed on the discharge line of each GPU. When gas is bled from a GPU blower circuit, gas from the ACU group which serves the GPU is also bled off.

– **Power plant for own needs (PPON)** which supplies power to CS "Portovaya". Emissions from PPON units contain: *nitrogen dioxide, nitrogen (II) oxide, carbon monoxide, methane, benzopyrene*. In case of PPON shutdown *methane* is bled through the stacks.

– **Fuel gas treatment plants (FGTP) (2 pcs)** intended for preparation and maintenance of specified values of temperature and pressure of GPU gas and gas to be consumed by CS. Continuous emissions to the atmosphere in the process of FGTP operation only concern effluent gases from heating units. Emissions from heating units contain *nitrogen dioxide, nitrogen (II) oxide, carbon monoxide, benzopyrene*.

Methane is emitted to the atmosphere in the process of natural gas bleeding through safety valves from the boiler fuel gas collector and FGTP external piping, and from filter separators and water heaters as well.

– **Impulse gas treatment plant (IGTP)** intended for treatment of impulse gas for isolation valves control. Major blowouts of natural gas into the atmosphere occur in the process of IGTP operation when gas is discharged from the separator and the receiver. The gas emitted into the atmosphere is *methane*.

– **Gas metering station (GMS)** intended for fiscal metering of gas flow rate prior to transmission to the subaqueous section of the pipeline. The gas metering process is not accompanied by continuous pollutant emissions into the atmosphere. Outgassing from the GMS piping is performed when compressor departments are stopped. The gas emitted into the atmosphere is *methane*.

– **Packaged modular boiler station** which satisfies the heat requirements. Emissions from the boiler station contain *nitrogen dioxide, nitrogen (II) oxide, carbon monoxide, benzopyrene*. When the boiler station is shut down for repair and inspection, boiler fuel gases are bled off through safety valves and also from internal pipelines prior to starting the boilers. Gas emitted into the atmosphere is *methane*.

– **Emergency diesel generator station (EDG)** used at CS "Portovaya" as a standby emergency power source. The following gases are emitted into the atmosphere together with diesel fuel combustion products in the process of ED operation: *nitrogen dioxide, nitrogen*

(II) *oxide, carbon monoxide, sulfur dioxide, carbon (soot), formaldehyde, benzopyrene, kerosene.*

– **Natural gas vehicle refueling compressor station (NGVRCS)** intended for refueling of vehicles with natural gas. The gas is emitted through a special stack of the fuel station upon completion of refueling. The gas is released from compressor module through a stack before inspection of filling module. The gas emitted into the atmosphere is *methane*.

Other sources of pollutant emissions are as follows:

– **Stabilized condensate storage** provided for receipt of stabilized condensate from FGTP and storage thereof until removal from the CS site. The following substances are emitted into the atmospheric air in the process of condensate transfer to reservoirs and consumers: *saturated hydrocarbons C₁-C₅, C₆-C₁₀, benzene, dimethylbenzene (xylol), methylbenzene (toluene).*

– **Petroleum, oil, and lubricants (POL) storage.** Pollutant emissions into the atmosphere occur in the process of diesel fuel receipt, “breathing”, and also due to leakage, and consist in fumes of diesel fuel containing *dihydrosulfide (hydrogen sulfide)* and *alkanes C₁₂-C₁₉* which enter the atmosphere through breather valves.

– **Battery rooms.** *Sulfuric acid* is emitted into the atmosphere in the battery charging process.

– **Surface water treatment facilities.** The following substances are emitted into the atmosphere: *nitrogen dioxide, nitrogen oxide, ammonia, dihydrosulfide (hydrogen sulfide), carbon monoxide, methane, saturated hydrocarbons C₁-C₅, hydroxybenzene (phenol), formaldehyde, mixture of natural mercaptans, petroleum mineral oil.*

– **Chemical laboratory.** The following pollutant are emitted into the atmosphere in the process of chemical analysis and dishwashing: *nitrogen dioxide, nitrogen (II) oxide, sulfur dioxide, carbon monoxide, ammonia, dihydrosulfide (hydrogen sulfide), sodium hydroxide, sulfuric acid, saturated hydrocarbons C₁-C₅, C₆-C₁₀, benzine, kerosene, alkanes C₁₂-C₁₉, propane-2-one;*

– **Environmental laboratory.** The following pollutants are emitted into the atmosphere in the process of chemical analysis and dishwashing: *nitrogen dioxide, carbon monoxide, dihydrosulfide (hydrogen sulfide), ammonia, hexane, butyl acetate, sodium hydroxide, carbon tetrachloride, trichloromethane.*

– **Mechanical repair workshop (MRW).** The following pollutants are emitted into the atmosphere through the general ventilation system in the process of metal-working machinery operation: *diiron trioxide, abrasive dust.* In addition, *lead* and *lead compounds* and *tin oxide* are emitted in the brazing process.

– **Painting operations** in the process whereof the following pollutant are emitted into the atmosphere: *propan-2-one (acetone), butyl acetate, butane-1-ol (butyl alcohol), ethanol (ethyl alcohol), methylbenzene (toluene), 2-Ethoxyethanol (ethyl cellosolve), dimethylbenzene (xylol), white spirit, solvent naphtha, ethylbenzene, suspended substances.*

– **Helicopter landing site** located close to the CS site. The following pollutants are emitted into the atmosphere in the take-off/landing process: *nitrogen dioxide, nitrogen (II) oxide, carbon (soot), sulfur dioxide, carbon monoxide.*

– **Private vehicle and bus parking area** located beyond the CS site. The following pollutants are emitted into the atmosphere in the vehicle entry/exit process: *nitrogen dioxide, nitrogen oxide, carbon (soot), kerosene, benzene.*

– **Stationary thermal destruction unit (STDU).**

There is an integrated waste treatment system (STDU) at the CS " Portovaya" site. It consists of three thermal destruction units: two KTO-1000.BM.KSZh plants intended for environmentally safe high-temperature neutralization and incineration of GTTP process water and one KTO-50.K40 plant for incineration of solid and liquid household and industrial waste generated in the process of CS operation

The following pollutants are emitted into the atmosphere in the process of waste incineration in the treatment plants: *diiron trioxide, manganese and manganese compounds, nitrogen (II) oxide, nitrogen dioxide, hydrochloride (hydrogen chloride), carbon (soot), sulfur dioxide, carbon monoxide, gaseous fluorides, saturated hydrocarbons C₁-C₅, C₆-C₁₀, benzopyrene, hydroxybenzene (phenol), formaldehyde, alkanes C₁₂-C₁₉, suspended substances, dioxins.*

The following pollutants are emitted into the atmosphere in the process of GTTP water treatment and incineration: *diiron trioxide, nitrogen (II) oxide, nitrogen dioxide, sulfur dioxide, carbon monoxide, benzopyrene.*

The following pollutants are emitted into the atmosphere in the process of water pumping into reservoirs: *dihydrosulfide (hydrogen sulfide), saturated hydrocarbons C-C₅ (for methane), 2.2-oxydiethanol (diethyleneglycol), methanol (methyl alcohol), ethanethiol (ethyl mercaptan).*

The bulk of pollutant emissions from CS " Portovaya" is accounted for by compressor departments (49254.195 t/year), ESN (11852.583 t/year), GTU (gas treatment unit)-1, 2 (14.148 t/year)

The total quantity of pollutant emission sources at CS "Portovaya" (taking into account the STDU) is 345, including 308 stationary sources¹ and 37 fugitive sources². 46 pollutant components are emitted into the atmosphere, including 9 solid components and 37 liquid/gaseous components.

The main pollutants are methane, nitrogen dioxide, nitrogen (II) oxide, and carbon monoxide.

The list of all pollutants, the sources of their generation, and MPE standards are given in table 7.4.

The quantity of pollutants currently entering the atmosphere from CS "Portovaya" is **64,440.869 t/year**. When STDU is put into operation the total emission will amount to **64,458.258 t/year**.

Following the results of pollutant dispersion estimation performed in the process of development of the draft of maximum permissible emission (MPE) limit values, the maximum concentrations of nitrogen dioxide in the area of the nearest apartment block (2.9 km from the boundary of CS "Portovaya" site) amount to 0.23 MAC³, the maximum concentrations of methane to 0.13 MAC. With respect to all other pollutants and their summation groups, maximum concentrations on the boundary of the roadside clear zone (700 m) and on the boundary of the residential area (2.9 km) do not exceed 0.1 MAC, i.e. they do not have a negative impact on the atmospheric air.

Table 7.1 contains MAC of the main pollutants entering the atmospheric air as a result of CS "Portovaya" operating activity (as per the Hygienic norms (GN) 2.1.6.1338-03 Maximum admissible concentrations (MAC) of pollutants in atmospheric air of inhabited localities).

Table 7.1.

MAC of the main pollutants entering the atmospheric air as a result of CS "Portovaya" operating activity

Substance	Criterion applied	Criterion value, mg/m ³	Class of hazard
Nitrogen dioxide (Nitrogen (IV) oxide)	MAC o/t	0.20000	3
Nitrogen (II) oxide (Nitrogen	MAC o/t	0.40000	3

¹Stationary emission source is a source equipped with a device for direct discharge of pollutants into the atmosphere. Emissions of pollutants are from places of their generation via system of gas exhaust pipes (smoke and airvent pipes, stacks).

²Fugitive emission source is a source equipped with a device for direct discharge of pollutants into the atmosphere. Emissions enter the atmosphere by means of evaporation from liquid surfaces above the ground, leaks from process machinery, etc. (reservoirs, tank vessels, evaporation surfaces of waste water treatment plants, leakiness of isolation valves) without passing through specially arranged ducts and pollution control equipment.

³MAC is a maximum permissible concentration of a pollutant in atmospheric air of inhabited locations: a concentration, which does not have a direct or indirect negative impact on the current and future generations throughout the whole life, result in performance impairment or impair man's health and sanitary living conditions.

The limits are established in the form of maximum one-time (o/t) and daily average (d/a) MAC indicating the class of hazard and limiting nuisance value taken as a basis for the establishment of a limit for a specific substance concentration.

oxide)			
Methane	SRLI ⁴	50.00000	-
Carbon monoxide	MAC o/t	5.00000	4
⁴ SRLI – safe reference level of impact – standard of maximum permissible concentration of pollutant in atmospheric air			

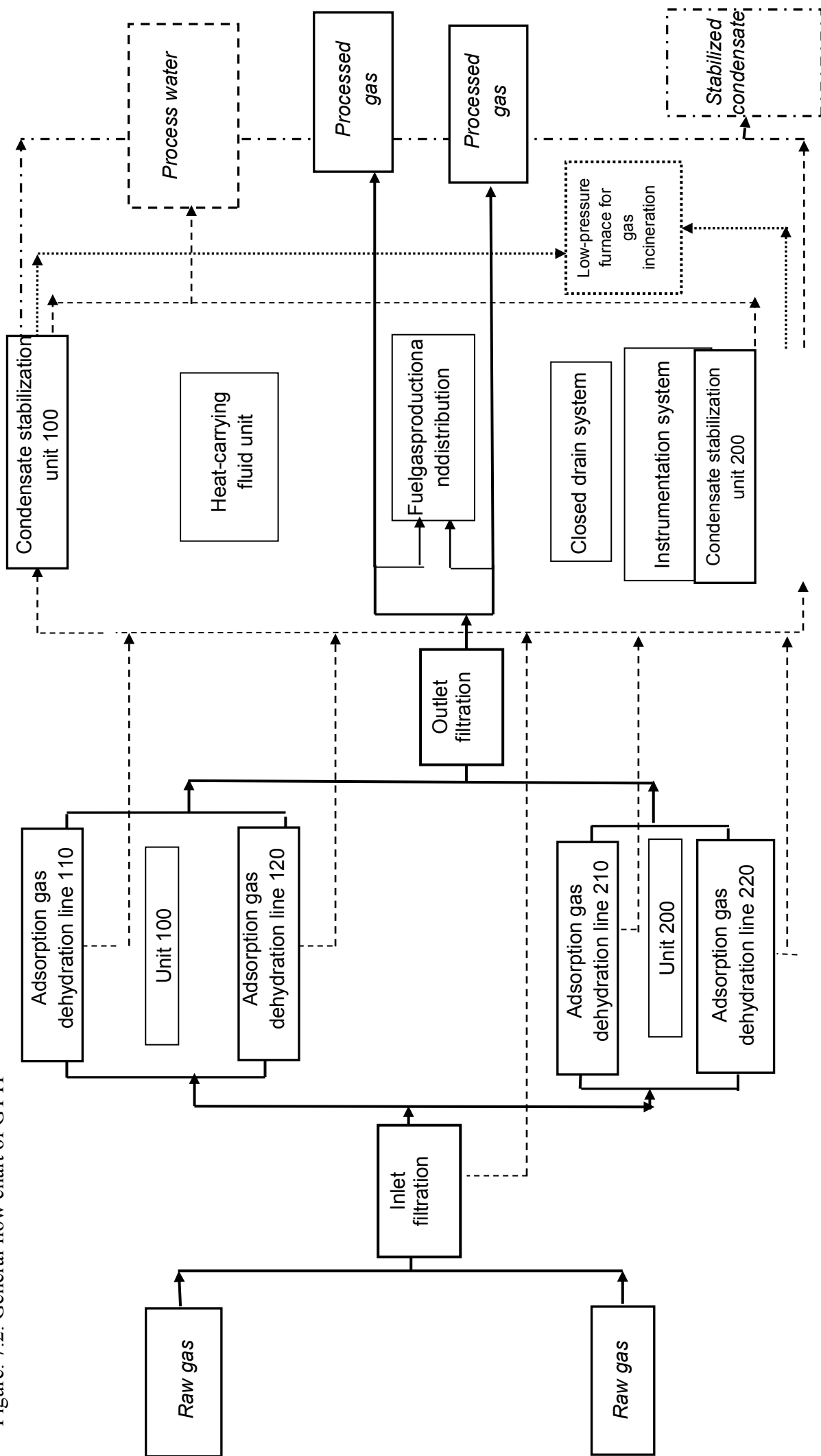
The primary activity of the Project is natural gas transportation via the North European gas pipeline and its operation, including maintenance (repair) and reconstruction of NEGP sections, branch joints and cross connections. Repair works also involve replacement and re-insulation of pipeline sections, replacement of damaged pipes, installation, repair and replacement of block valve stations, partial filling of valve station sites and etc.

Prior to start the repair works the natural gas is vented from sections under repair through the vent stacks. When isolation valves are replaced and repair works are completed, the gas pipeline sections are also purged with natural gas.

The gas is emitted into the air in the process of works on linear section of the North European gas pipeline is methane.

⁴SRLI – safe reference level of impact: the limit of maximum permissible concentration of a pollutant in atmospheric air.

Figure. 7.2. General flow chart of GTTP



3.2 Information on greenhouse gases

Greenhouse gas emission inventory is performed in compliance with “Methodological instructions and guidelines on quantitative analysis of volume of greenhouse gas emissions by organizations, performing business operations and other activity in the Russian Federation” (hereinafter referred to as - Methodological instructions), approved by the Ministry of Natural Resources and Ecology of the Russian Federation Order No 300 of June 30, 2015.

In accordance with Methodological instructions there are certain categories of emissions sources and respective green gases that need to be registered.

In relation to the Project operation activity the following categories of emissions sources and greenhouse gases were revealed:

- 1 Category: *stationary combustion of fuel*, greenhouse gas – CO₂ carbon dioxide;
- 2 Category: *fugitive emissions*, greenhouse gases – CH₄ methane and CO₂ carbon dioxide;

Stationary combustion of fuel. This category of sources of emissions of greenhouse gases include CO₂ emissions into the atmosphere which result from combustion of gaseous, liquid and solid fuel in boiler units, turbines, furnaces, incinerators and other heat engineering units with the purpose of generation of thermal and/or electric energy for own needs.

Fugitive emissions. This category includes vented and fugitive emissions of CH₄ and CO₂ into the atmosphere which result from the process operations at natural gas transportation, storage and gas processing as a result of process gases vent into the atmosphere through stacks and deflectors (diversion, dispersion, venting) without burning and catalytic oxidation. The process operations causing the fugitive emissions include purging of gas pipeline and process equipment, venting of process equipment, service lines, and pipeline sections; as well as displacement of air with gas, start-up, shutdown, changing of the operation modes of gas pumping units.

Calculation of volumes of greenhouse gas emissions is carried out in steps.

Total emissions of greenhouse gases are calculated in CO₂ equivalent by categories of sources in compliance with global warming potential of greenhouse gases.

Calculation of emissions of greenhouse gases from *stationary combustion of fuel* $E_{CO_2,y}$ in t CO₂ is performed using formula:

$$E_{CO_2,y} = \sum_{j=1}^n (FC_{j,y} * EF_{CO_2,j,y} * OF_{j,y}), \text{ where}$$

$FC_{j,y}$ – j fuel flow rate per y period, thous. m³

$EF_{CO_2,j,y}$ - coefficient of CO₂ emissions from j fuel combustion per y period

$OF_{j,y}$ - coefficient of j fuel oxidation, proportion

- j – fuel type, used for burning
- n – number of fuel types, used per y period

In accordance with calculation CO₂ emissions from stationary combustion of fuel in CS "Portovaya" in 2016 were **760 147,725 t**.

Calculation of **fugitive emissions** of greenhouse gases $E_{i,y}$ (t) is performed using formula:

$$E_{i,y} = \sum_{j=1}^n (FC_{j,y} \times W_{i,j,y} \times \rho_i \times 10^{-2}), \text{ where}$$

$FC_{j,y}$ - flow rate of j – hydrocarbon mixture as a result of process operations per y period, thous. m³ ;

$W_{i,j,y}$ - concentration of i - greenhouse gas in j – hydrocarbon mixture per y period, volume%.

ρ_i - density of i - greenhouse gas, kg/m³

i - greenhouse gases of CO₂, CH₄;

j – a type of hydrocarbon mixture;

n – number of types of hydrocarbon mixtures, used for process operations (without burning)

In accordance with calculation fugitive emissions of greenhouse gases of CS "Portovaya" for 2016 made methane – 2 745,824 t, carbon dioxide - 3,077 t, total - **2 748,901 t**.

Total emissions of greenhouse gases of Eco_{2e,y} by categories of sources are calculated in compliance with global warming potential of greenhouse gases and expressed in CO₂ equivalent using the following formula:

$$E_{CO_{2e},y} = \sum_{i=1}^n (E_{i,y} \times GWP_i), \text{ where}$$

$E_{i,y}$ – emissions of i - greenhouse gases per y period, t;

GWP_i - global warming potential of i - greenhouse gases, t CO₂- equivalent/t; for CH₄ is 25, for CO₂ is 1;

n – number of types of greenhouse gas emissions;

i - greenhouse gases of CO₂, CH₄;

Total greenhouse gas emissions of CS "Portovaya" in 2015 are **828 796, 402 t CO₂-equivalent**.

3.3 Information on emergency emissions and major blowouts

Major blowouts of natural gas into the atmosphere occur occasionally in the process of scheduled inspection and repair, they are performed through special vent stacks of main and

auxiliary process equipment. The frequency of major blowouts is determined by technical requirements to equipment and the operating environment thereof.

Emergency situations at CS are limited to emission of natural gas to the atmosphere in most cases. Emergency situations are off-nominal.

The most common emergency situations at CS are failures of GPU which have a constant dynamic load and a large number of movable elements. In this case, an automatic shutdown and disconnection of a GPU from CS gas pipelines are performed. In a number of emergency situations at GPU, the GPU piping is fully released from gas which is discharged into the atmosphere. Parameters of such emission for a single GPU are fully similar to those of emission in case of scheduled unit shutdown.

In case of violation of flowlines and interdepartment gasmain integrity at the CS and occurrence of fire hazard, a possibility of emission of the total volume of gas available in the CS piping (except for GTPP) through special stacks at the CS connection unit is provided for. Similar emissions are also provided for in case of scheduled CS shutdown.

In case of an emergency situation at GTPP a possibility of simultaneous gas blowout from all equipment of one of the dehydration lines through a common stack located beyond the boundaries of the unit is provided for. At the same time an emergency discharge of heavy gaseous hydrocarbons occur from the condensate stabilization unit to the low-pressure furnace for further incineration. This type of emergency situation at GTPP is the maximum emergency pollutant emission at CS "Portovaya" .

4 Management and monitoring

Activities aimed at reduction of possible negative impact of pollutant emissions on environment and human health shall be performed at the Project facilities. Polluting emissions should not exceed levels set in the MPE project (max.permmissible emissions), and air emission permits issued by Rosprirodnadzor based on MPE project, and should comply with emission limits outlined in the IFC EHS Guidelines, if the process equipment load conditions render it possible.

Such activities include:

- administrative and technical measures;
- industrial environmental control (IEC) of atmospheric air protection (performance of industrial environmental monitoring (IEM) of emissions of main pollutants and greenhouse gases). Please refer to Appendix 13 – Industrial environmental monitoring plan.

Plan of administrative and technical measures for reduction of negative impact of CS "Portovaya" and linear section of the North European gas pipeline to the atmospheric air is shown in Table 7.3.

Table 7.3.

Plan of administrative and technical measures for reduction of negative impact of CS "Portovaya" and linear section of NEGP on atmospheric air

Purpose	Mitigation actions	Action item lead	Action frequency
Reduction of emissions of pollutants (including greenhouse gases) to the atmosphere as a result of fuel combustion	Maintenance of process equipment and motor vehicles in good working order	"Portovoye" branch	Permanent
	Compliance with the process regulations on maintenance and repair work performance		As per the maintenance and repair plan of "Portovoye" branch
	Prevention of possible leaks of natural gas		Permanent
Reduction of emissions of pollutants from STDU operation	Compliance with fire and environmental safety requirements at waste incineration in STDU	"Portovoye" branch	Permanent
	STDU maintenance in good working order		
Reduction of natural gas emissions	Reduction of GPU fuel gas flow rate in the process of regular flushing of gas turbine plant axial compressor (as per the Energy Saving Program of "Portovoye" branch)	"Portovoye" branch	As per the Energy Saving Program of "Portovoye" branch
Reduction of natural gas emissions	Reduction of fuel gas consumption for regeneration gas heaters in the process of optimizing the CGTP operation mode	"Portovoye" branch	As per the Energy Saving program of "Portovoye" branch
Reduction of natural gas emissions	Reduction of gas losses during the scheduled works on the main gas pipeline, branch pipes and gas distribution station (GDS) owing to preliminary consuming of gas from sections of pipelines and GDS to be shut down.	"Portovoye" branch	As per the Energy Saving Program of "Portovoye" branch

IEM of emissions implies performance of environmental analytical (instrumental) control of pollutant emissions at sources thereof on the boundary of the production site SPZ and in the residential area.

Instrumental control is performed by efforts of an accredited environmental laboratory of the Company branch Engineering Technical Center (EL ITC) for the main stationary sources.

EL ITC is accredited for performance of the analysis of:

- atmospheric air (in compliance with Health Standard 2.2.5.1338-03 Maximum admissible concentrations (MAC) of pollutants in atmospheric air of populated areas; SanPiN 2.2.4. 5448-96 Hygienic requirements to microclimate of industrial premises);
- air of the sanitary protection zone (in compliance with Health Standard 2.2.5.1313-03 Maximum admissible concentrations (MAC) of pollutants in atmospheric air of populated areas; SanPiN 2.2.4. 5448-96 Hygienic requirements to microclimate of industrial premises);
- industrial emissions (in compliance with Health Standard 2.1.6.1338-03 Maximum admissible concentrations (MAC) of pollutants in atmospheric air of populated areas; RD 52.04.186-89 Atmosphere pollution control guide; GOST 17.2.4.06-90 Methods for determination of velocity and flow rate of gas-and-dust streams from stationary sources of pollution);
- physical factors (noise) in the sanitary protection zone and residential areas in compliance with SN 2.2.4/2.1.8.562-96 Noise at workplaces, in rooms of residential and public buildings and in a territory of a residential area).

Scope of EL ITC accreditation allows to perform measurements of nitrogen oxide, nitrogen dioxide, methane, carbon monoxide, oxygen, air temperature, relative humidity, air and dust velocity, gas-and-dust streams velocity, continuous and non-continuous noise.

Pollutant sampling frequency with respect to sources and a list of test parameters are given in the Industrial Environmental Monitoring Plan (Appendix 13 hereto).

In addition, analytical control of MPE limits compliance is conducted in the framework of IEC of atmospheric air protection.

Control of emissions of methane and carbon dioxide as well as other pollutant is performed in compliance with the timetable of MPE limits control at emission sources, approved by the enterprise management, by efforts of EL ITC (subject to the accreditation scope) or a third party accredited laboratory.

Methane and carbon dioxide emission inventory is taken on an annual basis.

All pollutant inventory is taken once every five years at the development of MPE draft code provision.

Control of methane emissions on linear section of NEGP is performed by calculation in compliance with the schedule of MPE limits control and is performed by Environment Protection engineer of branches. Frequency of analytical control is once a year.

IEC of atmospheric air protection in "Portovoye" subsidiary is performed in compliance with the requirements of the following documents:

- Gazprom STO 2-1.19-275-2008 Environmental protection at JSC "Gazprom" enterprises. Industrial environmental control. General requirements;
- Gazprom STO 2-1.19-297-2009 Environmental protection at Gazprom LLC enterprises. Industrial control of atmospheric air protection. Organization and maintenance procedure;
- Gazprom Transgaz Saint-Petersburg STO 32-03-01-2012 Industrial environmental control. Procedure.

Information on control of pollutant emissions from CS " Portovaya" is given in the Emission Management Plan (table 7.4).

The analysis of data shown in Table 7.4 allows to conclude that there are no exceedance of pollutant concentrations in the atmospheric air from the CS " Portovaya" sources: all levels of polluting emissions do not exceed the values set by the standards and emission limit permits.

Table 7.5 shows actual concentrations of main pollutants determined by measurements implemented at the emission sources at CS " Portovaya". Table 5.4 shows actual concentrations of methane on linear section of NEGP, determined by calculation. The pollutant concentrations are shown as average values for year 2016. Also RF standard values (g/sec) are shown for each source and IFC standards for reference. The analysis of data provided suggests that there are no exceedances of IFC standard levels for all pollutants.

Table 7.4.

Emission Management Plan

Functional Zone	Functional Zone configurations (FZC)	№ FCZ	Type of pollutant emission source	Pollutant	Pollutant hazard class	Pollutant emission standard level		Frequency of control	Frequency of control	Actual emissions in 2015		
						g/sec	t/year			g/sec	t/year	
CS connection unit	Pig receiver OC KPP 1200 (valve39-4), KPP 1400 (valve39-3)	0001, 0002	Stacks	Methane	-	2423,518	14,541	Once in 3 months		1037,101	7,2705	
	Input manifolds CS KPP 1200 (valve17-4y), KPP 1400 (valve17-3y), condensate collectors KPP 1200 (valve40-4) , KPP 1400 (valve40-3)	0003, 0004, 0005, 0006	Stacks	Methane	-	52814,52	317,458	Once a month	Computational method	48148,836	131,961	
IGTP	Total for the functional zone:											
	Separator, receiver	0195, 0196	Stack	Methane	-	38,458	1,641	Once a year	Computational method	38,458	0,8205	
Transportation Gas treatment plant	Total for the functional zone:											
	Regeneration gas heaters Train: 110, 120 210, 220	0007, 0008 0009, 0010	Smoke stack	Nitrogen dioxide	3	4,9836	117,8721	Once a year	Instrumental measurements (by accredited Environmental laboratory)	Instrumental measurements (by accredited Environmental laboratory)	0,709	14,523
				Nitrogen oxide	3	2,8208	66,7175				0,402	9,359
				Carbon monoxide	4	20,4747	484,2677				0,104	2,327
	HTF heaters, H-002-B, H-002-A	0011, 0012	Smoke stack	Nitrogen dioxide	3	2,2767	36,8826	Once a year	Instrumental measurements (by accredited Environmental laboratory)	Instrumental measurements (by accredited Environmental laboratory)	0,08	1,23
				Nitrogen oxide	3	1,2887	20,8769				0,045	0,692
Carbon monoxide				4	6,1257	99,2363	0,147				2,158	

LP heater	0013	Smoke stack	Nitrogen dioxide	3	9,652	28,504	Once a year	Instrumental measurements (by accredited Environmental laboratory)	0,013	0,401	
				Nitrogen oxide	3	5,463			16,138	0,007	0,216
				Carbon monoxide	4	99,081			292,483	0,042	1,294
				Methane	-	27,105			0,1189	4,482	0,08625
Separators TG A-002A, A-002B, A-009, A-010, Filter-separator of raw gas, Filter-separator of dry gas	0014, 0015, 0016, 0017, 0030, 0051	Stacks	Methane	-	169220	1405,8503	Once a year	Computational method	42142,417	371,1193	
Stacks of general (blow off) collectors №1, №2	0018, 0019	Stack	Methane	-	44,3	4,274	Once a year		44,740	4,274	
Adsorbents of trains: 110, 120, 210, 220	0031- 0050	Stacks	Methane	-	169443,5712	2573,2213	Once a year		Computational method	42193,188	407,67955
Total for the functional zone:											
Stabilized condensate storage	0052-0057	Breather vents	Saturated hydrocarbons C1-C5 (Methane)	-	25,6608	17,6142	Once a year	Computational method		25,660	8,808
				Saturated hydrocarbons C6-C10 (hexane)	-	19,6878			13,5144	19,687	6,76
				Benzole	2	1,6572			1,1376	1,657	0,568
				Dimethylbenzole(Xylool)	3	0,5538			0,3804	0,553	0,19
				Methylbenzole (Toluene)	3	1,0398			0,714	1,0398	0,356
				SC storage tanks							

		6002, 6003	Unorganized sources	Saturated hydrocarbons C1-C5 (Methane)	-	33,7001	27,0373	Once a year	Computational method	33,700	21,987
	SC pump station			Saturated hydrocarbons C6-C10 (hexane)	-	25,8559	20,744			25,855	16,87
				Benzole	2	2,1765	1,7462			2,176	1,4198
				Dimethylbenzole	3	0,7289	0,5856			0,728	0,47428
				Methylbenzole	3	1,3683	1,0993			1,368	0,8914
Total for the functional zone:											
		0063, 0074, 0085, 0096	Smoke stack	Nitrogen dioxide	3	23,203	585,6813	Once a year	Instrumental measurements (by accredited Environmental laboratory)	112,429	58,32448
	GPU №11, 12, 13, 14			Nitrogen oxide	3	13,076	330,3029			5,943	100,379
				Carbon monoxide	4	684,641	17461,068			104,972	1844,881
	Gaz boilers KBa-0,5ГН	0126-0128	Smoke stack	Nitrogen dioxide	3	0,0399	1,2366	Once a year	Computational method	0,0399	0,505
				Nitrogen oxide	3	0,0225	0,6999			0,022	0,286
				Carbon monoxide	4	0,1617	5,0127			0,161	2,048
Compressor workshop № 1	TG lines of GPU №11, 12, 13 14; seals of GPU №11, 12, 13, 14	0065,0076, 0087, 0098,0070, 0080, 0081, 0091, 0092, 0102, 0103	Stacks	Methane	-	164,248	433,834	Once a year	Computational method	164,248	150,582
	compression circuit with ACU of GPU	0064	Stacks	Methane	-	2244,1	236,14	Once a year	Computational method	2244,100	118,701

	№11	compression circuit with ACU of GPU №12, 13, 14	0075, 0086, 0097	Stacks	Methane	-	18013,14	5453,82	Once a month	Computational method	16946,226	722,029				
		TG line of GPU №11, 12, 13, 14 after shut off valve	0066, 0077, 0088, 0099	Stacks	Methane	-	2,908	0,5	Once a year	Computational method	2,908	0,21175				
		Filter-separators TG GPU №11, 12, 13, 14	0067, 0078, 0089, 0100	Stacks	Methane	-	6,683	1,314	Once a year	Computational method	0,000	0,657				
		General manifold	0107	Stacks	Methane	-	488,267	2,344	Once a year	Computational method	488,267	1,172				
		Input manifold CW-1 (valves22-2, 17-2, 17-3), bypass manifold CW-1 (valve20c-1, valve20c-3), output manifold CW-1 (valve20c-1, 18-3)	0108, 0109, 0110, 0111, 0112,0113, 0114	Stacks	Methane	-	38007,3	360,702	Once a month	Computational method	37895,718	78,954				
		heating unit HVAC GPU №11	0072	Smoke stack	Nitrogen dioxide	3	0,0093	0,2124	Once a year	Computational method	0,009	0,134				
		heating unit HVAC GPU №12, 13, 14	0083, 0094,0105	Smoke stack	Nitrogen dioxide	3	0,037	0,7179	Once a year	Computational method	0,037	0,359				
					Nitrogen dioxide	3	0,021	0,4065			0,021	0,203				
					Nitrogen oxide	3										
		ИК TG GPU №11, ЦБН GPU №11	0068, 0069	Stack	Methane	-	23,5597	1,32901	Once a year	Computational method	23,559	0,664505				
		GTP (filter-separators and water heaters ; gas pressure reduction line CH; pressure reduction line TG ; external piping connections)	0115, 0116, 0117, 0125	Stacks	Methane	-	23,3436	0,125	Once a year	Computational method	23,346	0,0626				
		Total for the functional zone:														
													58763,618	24385,0272	57623,3822	3132,1391

Output manifolds site	MIKК (valve 21c-1, 21c-2, 21c-3, 21c-4)	0207, 0208, 0209, 0210	Stack	Methane	-	40200,44	136,682	Once a month	Computational method	40200,44	68,341
Total for the functional zone:											
STDU – Stationary thermal destruction unit	KTO-50.K40.KC	0058	Smoke stack	Nitrogen dioxide	3	0,020	0,185	Once a year	Instrumental measurements (by accredited Environmental laboratory)	0,004212	0,005
				Nitrogen oxide	3	0,006	0,060				
				Carbon (soot)	3	0,006	0,058				
				Sulfur dioxide(Sulfurous anhydride)	3	0,171	1,570				
				Carbon monoxide	4	0,086	0,804				
				Benz/a/pyrene(3,4-Benzpyrene)	1	0,000	0,000				
	KTO-1000.БМ.КСЖ	0059, 0060	Smoke stacks	Nitrogen dioxide	4	0,055	1,683	Once a year	Instrumental measurements (by accredited Environmental laboratory)	0,01321025	0,45774
				Nitrogen oxide	4	0,031	0,952				
				Sulfur dioxide(Sulfurous anhydride)	3	0,099	3,030				
				Benz/a/pyrene(3,4-Benzpyrene)	1	0,000	0,000				
				Dihydro-sulfide	2	0,095	0,950				
				HC limits C ₁ -C ₅ (Methane)	-	1,669	5,501				
Process water reservoirs	0061, 0062	Breather vents					Once a year	Computational method	0,003	0,38	
									0,194	2,199	

							Methanol	3	1,331	0,129			0,292	0,052
							Ethanol	3	0,006	0,000			0,000	0,000
							Total for the functional zone:						4,016020 577	
Gas metering station (GMS)	GMS piping	0197, 0198	Stack	Methane	-	4303,530	4303,530	20,656	4303,530	20,656	Once a year	Computational method	4303,530	10,328
						4303,530	4303,530	20,656	4303,530	20,656			4303,530	10,328
Generation of electric and heat power	«Zvezda-1600HK-02M3-1001» №1, 2, 3, 4, 5, 6; АЛЭС «Zvezda-1000HK-02M3»; «Zvezda - 280HK-02M3»	0284- 0297	Smoke stack	Nitrogen dioxide	3	5,406	5,406	1,051	5,406	1,051	Once a year	Computational method	5,406	0,411
				Nitrogen oxide	3	3,0601599	3,0601599	0,595337	3,0601599	0,595337			3,060	0,231
				Carbon (soot)	3	0,305	0,305	0,057	0,305	0,057			0,305	0,0268
				Sulfurous dioxide(Sulfurous anhydride)	3	4,218	4,218	0,795	4,218	0,795			4,218	0,334
				Carbon monoxide	4	8,050	8,050	1,471	8,050	1,471			8,050	0,613
				Benz/a/ptylene(3,4-Benzpyrene)	1	0,000	0,000	0,000	0,000	0,000			0,000	0,000001 32
				Formaldehyde	2	0,086	0,086	0,015	0,086	0,015			0,0868	0,0068
				Kerosene	-	2,085	2,085	0,382	2,085	0,382			2,085	0,175
				Nitrogen dioxide	3	0,088	0,088	0,512	0,088	0,512			0,088	0,207
				Nitrogen oxide	3	0,050	0,050	0,290	0,050	0,290			0,050	0,117
				Carbon monoxide	4	0,324	0,324	1,879	0,324	1,879			0,324	0,762
				Nitrogen dioxide	3	46,735	46,735	1263,381	46,735	1263,381			6,084	95,274
											Once a year	Computational method		
											Once a year	Instrumental measurement		

	External gas supply system PPON, input manifold PPON	0219,0220, 0221, 0222, 0223, 0224, 225, 0226, 0227, 0228, 0229, 0230	Stacks	Nitrogen oxide	3	26,454	715,428	Once a year	ts (by accredited Environmental laboratory)	3,444	53,932						
												Carbon monoxide	4	177,519	4798,780	19,872	304,285
												Methane	-	187,744	5075,187	13,189	198,651
												Benz/a/pyrene	1	0,003	0,076	0,00000042	0,0000084
POL storage	Reservoirs with diesel fuel	6004	Unorganized source	Dihydrosulphide (hydrogen sulphide)	2	0,000	0,000	Once a year	Computational method	0,000	0,0000015						
												Alkanes C12-C19 (Saturated hydrocarbons C12-C19)	4	0,052	0,005	0,052	0,0052
Total for the functional zone:																	
						483,933	11859,931			88,06180042	655,03870972						
Total for the functional zone:																	
NGVRCS – Natural gas vehicle refueling compressor station	unit MK3CA-50BII-2	0299	Stack	Methane	-	8,444	0,030	Once a year	Computational method	0,000	0,015						
Total for the functional zone:																	
Waste water treatment unit	Waste water treatment unit	0303	Труба	Nitrogen dioxide	3	0,002	0,003	Once a year	Instrumental measurements (by accredited Environmental	0,000	0,003754						
												Dihydrosulphide (hydrogen)	2	0,000	0,006	0,000	0,006157

Laboratories	exhaust hoods of chemical and ecological labs	0304, 0305	Stack	sulphide) Гидроксидное (Фенол) Смесь природных меркаптанов	2	0,000	0,004	Once a year	Instrumental measurements (by accredited Environmental laboratory)	0,000	0,00413			
					3	0,000	0,003			0,000	0,003078			
					Total for the functional zone:					0,002	0,017	0,000	0,017119	
					Nitrogen dioxide	3	0,002			0,007	0,000	0,00089		
					Dihydrogen sulphide (hydrogen sulphide)	2	0,000			0,000	0,000015	0,00005		
					Propane-2-one (Acetone)	4	0,026			0,081	0,0000145	0,00007		
					Benzene (petroleum, low sulphur) (in equivalent of carbon)	4	0,154			0,481	0,00029	0,001		
					Kerosene	-	0,071			0,232	0,00029	0,001		
					Alkanes C12-C19 (Saturated hydrocarbons C12-C19)	4	0,020			0,061	0,00023	0,0008		
					Trichloroethane (chloroform)	2	0,022			0,053	0,00019	0,0004		
tetrachloroethane (tetrachloroethane)	2	0,029	0,067	0,00004	0,00009									

Total for the functional zone:																	
Painting post	Painting works	6035	Unorganized source	Dimethylbenzole(Xylo)	3	0,3278	0,986	Once a year	Computation al method (enterprise or a specialized organization)	0,0235	0,0043						
				Methylbenzole (Toluene)	3	0,009	0,095			0,001							
				ethylbenzene	3	0,001	0,064			0,002							
				Butane-1-ol (Alcohol n-butyl)	3	0,002	0,122			0,001							
				butyl acetate	4	0,001	0,019			0,009							
				solvent naphtha	-	0,037	0,18			0,037							
				white spirit	-	0,031	0,268			0,000							
				Suspended solids	3	0,031	0,285			0,000							
				Total for the functional zone:									0,117	1,866		0,086	0,1142
				Vehicles parking	Vehicles engines	6036	Unorganized source			Nitrogen dioxide		3	0,003	0,004	Once a year	Computation al method	0,003
Carbon monoxide	4	0,166	0,198					0,166									
Total for the functional zone:						0,170	0,203			0,171	0,203544						
Helicopter site	helicopter МИ-8	6037	Unorganized source	Nitrogen dioxide	3	0,491	0,102	Once a year	Computation al method	0,491	0,028						
				Nitrogen oxide	3	0,278	0,058			0,278							
				Carbon (soot)	3	0,094	0,019			0,094							
				Sulfur dioxide(Sulfurous anhydride)	3	0,037	0,007			0,037							
				Kerosene	-	0,113	0,023			0,113							
				Total for the functional zone:									1,016	0,212		251628,26	7675,501

								206992	793297
TOTAL for all sources:			368192,3 568	64288,38 2				251628,26 206992	7675,501 793297

Table 7.5.

Information on IEC at the emission sources of CS "Portovaya", year 2016.

Control object (source)	№ source	Controlled parameters	Standard levels		Actual value (measured)	
			IFC	MPE	mg/m ³	g/sec
PPON №1 axis A	0217	nitrogen oxides(Nox)	1600	absent	750	1,330
		nitrogen dioxide(NO ₂)		3,1532	2	0,704666
		nitrogen oxide (NO)		1,7848	483	0,398867
		carbon oxide (CO)	absent	11,8958	794	1,406357
		benz/a/pyrene		0,000213	0,000001	0,00000008
		methane		12,824	1200	0,933484
PPON №1 axis B	0218	nitrogen oxides(Nox)	1600	absent	780	1,379
		nitrogen dioxide(NO ₂)		3,2951	14	0,730891
		nitrogen oxide (NO)		1,8652	501	0,413712
		carbon oxide (CO)	absent	12,5109	815	1,442242
		benz/a/pyrene		0,000211	0,000001	0,00000009
		methane		13,4064	1200	1,15892
PPON №2 axis A	0219	nitrogen oxides(Nox)	1600	absent	310	0,605
		nitrogen dioxide(NO ₂)		2,8235	5	0,321079
		nitrogen oxide (NO)	absent	1,5982	199	0,181743
		carbon oxide (CO)		10,7857	673	1,313226

Control object (source)	№ source	Controlled parameters	Standard levels		Actual value (measured)	
			IFC	MPE	mg/m ³	g/sec
			mg/m ³	g/sec		
PPON №2 axis B	0220	benz/a/pyrene		0,000213	0,00001	0,00000008
		methane		12,9797	1200	1,083949
		nitrogen oxides(Nox)	1600	absent	407	0,788
		nitrogen dioxide(NO ₂)		2,7405	8	0,418431
		nitrogen oxide (NO)		1,5512	262	0,236848
		carbon oxide (CO)	absent	10,9623	805	1,561311
		benz/a/pyrene		0,000213	0,00001	0,00000008
		methane		13,0322	1070	0,969469
		nitrogen oxides(Nox)	1600	absent	436	0,763
		nitrogen dioxide(NO ₂)		3,5608	5	0,40465
PPON №3, axis A	0221	nitrogen oxide (NO)		2,0156	282	0,229047
		carbon oxide (CO)	absent	13,6227	815	1,428678
		methane		13,0364	1030	0,821265
		benz/a/pyrene		0,000213	0,00001	0,00000008
		nitrogen oxides(Nox)	1600	absent	437	0,760
		nitrogen dioxide(NO ₂)		3,5408	4	0,403135
PPON №3, axis B	0222	nitrogen oxide (NO)		2,0042	283	0,22819
		carbon oxide (CO)	absent	13,6583	833	1,449057
		methane		12,9675	1040	0,855827
		benz/a/pyrene		0,000214	0,00001	0,00000008
		nitrogen oxides(Nox)	1600	absent	341	0,667
		nitrogen dioxide(NO ₂)		3,6358	17	0,353806
PPON №4 axis A	0223	nitrogen oxide (NO)	absent	2,058	212	0,200267
		carbon oxide (CO)		14,0941	787	1,540599

Control object (source)	№ source	Controlled parameters	Standard levels		Actual value (measured)	
			IFC	MPE	mg/m ³	g/sec
			mg/m ³	g/sec		
PPON №4 axis B	0224	methane		13,857	1080	0,882308
		benz/a/pyrene		0,000224	0,00001	0,00000008
		nitrogen oxides(Nox)	1600	absent	253	0,607
		nitrogen dioxide(NO ₂)		3,6116	78	0,321533
		nitrogen oxide (NO)		2,0443	114	0,18200
		carbon oxide (CO)	absent	13,8992	660	1,585508
PPON №5 axis A	0225	methane		13,838	1020	0,854813
		benz/a/pyrene		0,000222	0,00001	0,00000009
		nitrogen oxides(Nox)	1600	absent	419	0,032
		nitrogen dioxide(NO ₂)		3,6043	19	0,017417
		nitrogen oxide (NO)		2,0402	262	0,009859
		carbon oxide (CO)	absent	12,4476	841	0,065944
PPON №5 axis B	0226	benz/a/pyrene		0,000213	0,000001	0,00000008
		methane		13,5324	1300	1,055849
		nitrogen oxides(Nox)	1600	absent	409	0,033
		nitrogen dioxide(NO ₂)		3,6567	31	0,017679
		nitrogen oxide (NO)		2,0698	247	0,010007
		carbon oxide (CO)	absent	14,0889	734	0,059829
PPON №6 axis A	0227	benz/a/pyrene		0,000221	0,000001	0,00000008
		methane		14,112	430	0,357644
		nitrogen oxides(Nox)	1600	absent	807	0,827
		nitrogen dioxide(NO ₂)		3,2269	59	0,438262
		nitrogen oxide (NO)		1,8265	489	0,248073
		carbon oxide (CO)	absent	11,9487	960	0,983831

Control object (source)	№ source	Controlled parameters	Standard levels		Actual value (measured)	
			IFC	MPE	mg/m ³	g/sec
			mg/m ³	g/sec		
PPON №6 axis B	0228	benz/a/pyrene		0,000213	0,000001	0,00000008
		methane		13,2344	1090	0,899551
		nitrogen oxides(Nox)	1600	absent	652	0,873
		nitrogen dioxide(NO ₂)		3,1843	87	0,462493
		nitrogen oxide (NO)		1,8024	369	0,261789
		carbon oxide (CO)	absent	11,9135	936	1,253915
		benz/a/pyrene		0,000214	0,00001	0,00000008
		methane		13,2147	280	0,234473
		nitrogen oxides(Nox)	1600	absent	551	0,770
		nitrogen dioxide(NO ₂)		3,3098	109	0,408215
PPON №7 axis A	0229	nitrogen oxide (NO)		1,8735	289	0,231065
		carbon oxide (CO)	absent	12,7088	890	1,245200
		methane		13,724	1150	1,024
		benz/a/pyrene		0,000219	0,00001	0,000000088
		nitrogen oxides(Nox)	1600	absent	477	0,617
		nitrogen dioxide(NO ₂)		3,3925	70	0,327006
PPON №7 axis B	0230	nitrogen oxide (NO)		1,9203	266	0,185098
		carbon oxide (CO)	absent	12,9831	767	0,991742
		methane		13,986	1180	0,965
		benz/a/pyrene		0,000222	0,00001	0,000000081
		nitrogen oxides(Nox)	320	absent	64	0,376
Regeneration gas heater 110 train	0007	nitrogen dioxide(NO ₂)		1,1906	2	0,137082
		nitrogen oxide (NO)	absent	0,6739	41	0,077594
		carbon oxide (CO)		5,2219	0	0,001678

Control object (source)	№ source	Controlled parameters	Standard levels		Actual value (measured)	
			IFC	MPE	mg/m ³	g/sec
			mg/m ³	g/sec		
Regeneration gas heater 120 train	0008	nitrogen oxides(Nox)	320	absent	70	0,284
		nitrogen dioxide(NO ₂)	absent	1,1906	0,151769	
		nitrogen oxide (NO)		0,6739	0,085907	
		carbon oxide (CO)		5,2219	0,006781	
Regeneration gas heater 210 train	0009	nitrogen oxides(Nox)	320	absent	52	0,316
		nitrogen dioxide(NO ₂)	absent	1,2934	0,167581	
		nitrogen oxide (NO)		0,7321	0,094857	
		carbon oxide (CO)		5,142	0,010147	
Regeneration gas heater , train 220	0010	nitrogen oxides(Nox)	320	absent	54	0,402
		nitrogen dioxide(NO ₂)	absent	1,256	0,205897	
		nitrogen oxide (NO)		0,7109	0,116545	
		carbon oxide (CO)		5,1291	0,011994	
HTF heater H 002-A	0012	nitrogen oxides(Nox)	320	absent	78	0,066
		nitrogen dioxide(NO ₂)	absent	1,0823	0,035382	
		nitrogen oxide (NO)		0,6126	0,020028	
		carbon oxide (CO)		2,9915	0,053561	
HTF heater H 002-B	0011	nitrogen oxides(Nox)	320	absent	94	0,066
		nitrogen dioxide(NO ₂)	absent	1,1944	0,035372	
		nitrogen oxide (NO)		0,6761	0,020022	
		carbon oxide (CO)		3,1342	0,012975	
LP heater	0013	nitrogen oxides(Nox)	320	absent	6	0,027
		nitrogen dioxide(NO ₂)	absent	9,652	0,01520	
		nitrogen oxide (NO)		5,463	0,008604	
		carbon oxide (CO)		99,081	0,054403	

Control object (source)	№ source	Controlled parameters	Standard levels		Actual value (measured)	
			IFC	MPE	mg/m ³	g/sec
			mg/m ³	g/sec		
Eco lab	0305	trichloromethane	absent	0,022848	<1	<0,000177
		tetrachloromethane	absent	0,029376	<0,2	<0,000035
Chemical lab	0304	nitrogen dioxide	absent	0,0022356	0,096	0,00003
		dihydrosulphide	absent	0,0001408	<0,05	<0,000014
		acetone	absent	0,026496	0,076	0,000027
		benzene	absent	0,154836	<1	<0,000289
		kerosene	absent	0,071208	<1	0,000289
		saturated hydrocarbonC12-C19	absent	0,0207	<0,8	<0,00023
КТО-1000 (А) БМ КСЖ	0059	NOx	320	absent	<7,5	-
		nitrogen dioxide(NO ₂)	absent	0,0283131	<4	0,00244
		nitrogen oxide (NO)	absent	0,0160236	<2,3	0,00140
		Sulphur dioxide	absent	0,050985	<11	0,00671
		benz/a/pyrene	absent	0,0000057	0,00001	0,000000007
		Dust (solids)	absent	absent	<1	0,00061
		NOx	320	absent	7,5	0,007
		nitrogen dioxide(NO ₂)	absent	0,020812	3,9	0,00409
КТО-50.К-40.К	0058	nitrogen oxide (NO)	absent	0,00605	2,3	0,00241
		Sulphur dioxide	absent	0,171336	11	0,011537
		carbon oxide (CO)	absent	0,086636	7,5	0,007866
		benz/a/pyrene	absent	0,0000023	0,00001	0,0000000105
		Dust (solids)	absent	0	1	0,001049
		NOx	320	absent	7,5	0,01785
КТО-1000 (Б) БМ КСЖ	0060	nitrogen dioxide(NO ₂)	absent	0,0271886	4,0	0,00248
		nitrogen oxide (NO)	absent	0,0153898	2,3	0,00143

Control object (source)	№ source	Controlled parameters	Standard levels		Actual value (measured)	
			IFC	MPE	mg/m ³	g/sec
			mg/m ³	g/sec		
		benz/a/pyrene	absent	0,0000054	0,00001	0,00000007
		Sulphur dioxide	absent	0,0489600	11	0,00682
		Dust (solids)	absent	absent	1	0,00062
		NOx	320	absent	0,12	0,00023
		nitrogen dioxide(NO ₂)	absent	0,0022356	0,096	0,0002056
		hydroxybenzole (phenol)	absent	0,000142	0,037	0,000073
		dihydrosulphide	absent	0,000213	0,05	0,000099
		methylmercaptan	absent	0,0001102	0,005	0,0000099
Treatment facilities	0303					

Table 7.6.

Information on IEC results on NEGP linear section in 2016.

Branch/ NEGP section (km)	Controlled PS	Standard levels		Actual value (calculated), g/s
		IFC	MPE	
Portovoye Branch (km 794,37 – km 898,81; km 796,68 – km 893,842)	Methane	absent	397283,780	18880,234
Severnoye Branch (km 597,0 – km 794,37; km 599,6 – km 796,68)	Methane	absent	43418,731	No works performed
Volkhovskoye Branch (km 597.0 - km 474,4; km 599,6 – km 511,0)	Methane	absent	69627,654	22861,227

Table 7.7 shows IEC data of atmospheric air within SPZ of CS " Portovaya" in year 2016 (average annual values). The analysis of data provided suggests that there are no exceedances of IFC standard levels for all pollutants in all control points.

Table 7.7.

Information on IEC results within SPZ of CS " Portovaya" in year 2016.

Control object	Controlled parameters	Actual ¹ mg/m3	MPE (o/t) ² , mg/m3	IFC standard ³ , mg/m3
SPZ border, 920 m to the north from CS " Portovaya" border	Nitrogen dioxide (NO ₂) ⁴	< 0,02	0,2	0,2
	Nitrogen oxide (NO)	< 0,03	0,4	-
	Carbon oxide (CO)	< 1,5	5	-

	Methane (CH4)	< 25	50	-
	Sulphur dioxide ⁵	0,04	0,5	0,5
	PM 2,5 and <	0,005	0,16	25
	PM 10 and <	0,004	0,3	50
SPZ border , 970 m to the east from CS « Portovaya» border	Nitrogen dioxide (NO ₂)	< 0,02	0,2	0,2
	Nitrogen oxide (NO)	< 0,03	0,4	-
	Carbon oxide (CO)	< 1,5	5	-
	Methane (CH4)	< 25	50	-
	Sulphur dioxide	0,04	0,5	0,5
	PM 2,5 and <	0,004	0,16	25
SPZ border , 990 m to the south from CS « Portovaya» border	PM 10 and <	0,003	0,3	50
	Nitrogen dioxide (NO ₂)	< 0,02	0,2	0,2
	Nitrogen oxide (NO)	< 0,03	0,4	-
	Carbon oxide (CO)	< 1,5	5	-
	Methane (CH4)	< 25	50	-
	Sulphur dioxide	0,04	0,5	0,5
	PM 2,5 and <	0,004	0,16	25
	PM 10 and <	0,004	0,3	50
	Nitrogen dioxide (NO ₂)	< 0,02	0,2	0,2
	Nitrogen oxide (NO)	< 0,03	0,4	-
SPZ border , 1000 m to the west from CS « Portovaya» border	Carbon oxide (CO)	< 1,5	5	-
	Methane (CH4)	< 25	50	-
	Sulphur dioxide	0,04	0,5	0,5
	PM 2,5 and <	0,004	0,16	25
	PM 10 and <	0,004	0,3	50
	Nitrogen dioxide (NO ₂)	< 0,02	0,2	0,2
	Nitrogen oxide (NO)	< 0,03	0,4	-
	Carbon oxide (CO)	< 1,5	5	-
	Methane (CH4)	< 25	50	-
	Sulphur dioxide	0,04	0,5	0,5
Bolshoi Bor settlement	PM 2,5 and <	0,003	0,16	25
	PM 10 and <	0,003	0,3	50
	Nitrogen dioxide (NO ₂)	< 0,02	0,2	0,2
	Nitrogen oxide (NO)	< 0,03	0,4	-
	Carbon oxide (CO)	< 1,5	5	-

Methane (CH4)	< 25	50	-
Sulphur dioxide	0,04	0,5	0,5
PM 2,5 and <	0,006	0,16	25
PM 10 and <	0,084	0,3	50

¹ Result of research of the highest non-recurrent concentration
² GN 2.1.6.1338-03 "Pollutant MAC in the atmospheric air of populated areas "
³ HSE Guidelines. General HSE Guidelines: environment protection
⁴ Measurements were performed by Engineering technical center (ETC) of "Gazprom transgaz Saint-Petersburg" LLC. The averaging period for nitrogen dioxide, nitrogen oxide, carbon oxide and methane – 1 year.
⁵ Measurements were performed under the contract with FBU "TZLATI for North-West Federal Region".
Sulphur dioxide, PM 2,5 and <, PM 10 and < - 2 months

Table 7.8 shows IEC data of noise levels within SPZ of CS " Portovaya" and nearest settlement Bolshoi Bor village, in year 2016 (average annual values). The analysis of data provided suggests that there are no exceedances of IFC standard levels of noise levels in all control points.

Table 7.8.

Information on IEC noise levels results within SPZ of CS " Portovaya" in year 2016.

Control object ⁶	Controlled parameters	Actual ¹ mg/m3	MPE (o/t) ² , mg/m3	IFC standard ³ , mg/m3
SPZ border to the north from CS " Portovaya" border	Nitrogen dioxide (NO ₂) ⁴	< 0,02	0,2	0,2
	Methane (CH4) ⁴	< 25	50	-
	Sulphur dioxide ⁵	< 0,04	0,5	0,5
	PM 2,5 and < ⁵	0,013	0,16	0,025
	PM 10 and < ⁵	0,02	0,3	0,050
SPZ border to the east from CS	Nitrogen dioxide (NO ₂)	< 0,02	0,2	0,2

« Portovaya» border	Methane (CH4)	< 25	50	-
	Sulphur dioxide	< 0,04	0,5	0,5
	PM 2,5 and <	0,01	0,16	0,025
	PM 10 and <	0,015	0,3	0,050
SPZ border to the south from CS « Portovaya» border	Nitrogen dioxide (NO ₂)	< 0,02	0,2	0,2
	Methane (CH4)	< 25	50	-
	Sulphur dioxide	< 0,04	0,5	0,5
	PM 2,5 and <	0,011	0,16	0,025
SPZ border to the west from CS « Portovaya» border	PM 10 and <	0,017	0,3	0,050
	Nitrogen dioxide (NO ₂)	< 0,02	0,2	0,2
	Methane (CH4)	< 25	50	-
	Sulphur dioxide	< 0,04	0,5	0,5
	PM 2,5 and <	0,009	0,16	0,025
	PM 10 and <	0,014	0,3	0,050

¹ Result of research of the highest non-recurrent concentration
² GN 2.1.6.1338-03 "Pollutant MAC in the atmospheric air of populated areas "
³ HSE Guidelines. General HSE Guidelines: environment protection
⁴ Measurements were performed by EL ETC of "Gazprom transgaz Saint-Petersburg" LLC. The averaging period for nitrogen dioxide and methane – 1 year.
⁵ Measurements were performed under the contract with FBU "TZLATI for North-West Federal Region". Sulphur dioxide, PM 2,5 and <, PM 10 and < - 2 months

Appendix 32-03-06-01-08

Water resources management plan

1 Purposes

Purposes of the Water Resources Management Plan are as follows:

- mitigation of negative impact from operational activities of CS “Portovaya” and the linear section of the North European gas pipeline from CS “Volkhovskya” to the Portovaya Bay on the quality of surface and subsurface natural waters;
- rational use of water resources.

The Water Resources Management Plan should be considered in combination with other Plans of the Company:

- Waste Management Plan;
- Industrial Environmental Monitoring Plan.

2 Statutory and other requirements

The Water Resources Management Plan has been developed in compliance with IFC PS3 "Rational Resources use and environmental pollution prevention", IFC General EHS Guidelines, as well as applicable Russian Federation standards for protection of water bodies.

According to the requirements of the above standard, the Company shall prevent possible negative impact of operational activities on water bodies, and should this be impossible, to seek to mitigate such impact.

When substantial volumes of water are used, the Company shall take measures to save water, use alternative water supply sources, compensate for water consumption in order to reduce the total requirements for water resources down to the level of available supply, and estimate options of project implementation on another site.

3 Characteristic of impact from CS "Portovaya" and linear section of North European gas pipeline from CS “Volkhovskya” to the Portovaya Bay on surface water

Impact on water environment at operation of CS "Portovaya":

- water withdrawal from artesian wells to satisfy the household, potable , and sanitary needs of the personnel, and water withdrawal from the Gulf of Finland for fire-fighting needs;

- discharge of treated effluents into a surface water body (the Portoviy Creek);
- possible POL leaks and spills in the process of accumulation and transportation thereof, as well as accidental spills of gas treatment products.

- There is no impact on surface water bodies in the process of operation of North European gas pipeline linear section from CS “Volkhovskaya” to the Portovaya Bay.

3.1 CS "Portovaya" water consumption and discharge

There are two water supply systems at CS "Portovaya" site: household and fire-fighting, supplying water for household, potable, industrial, and fire-fighting needs.

Sources of water supply are as follows:

- two artesian wells (one operating well and one standby well) of the household and potable water supply system;
- surface water intake from the Gulf of Finland for the fire-fighting water supply system.

Household and industrial wastewater, surface (rain and melt) water, road washings, and drain waters are generated in the process of CS "Portovaya" operation.

Wastewater is generated as a result of fresh water use for household, potable and industrial needs, as well as for site watering. Water is not used in the main processes.

A separate sewage system is provided for wastewater collection: for household, storm waters, industrial and drain waters.

The following wastewater treatment facilities are provided at CS "Portovaya" site:

- sewage treatment plants KOU-40 BIO for treatment of household wastewater, which receive wastewater from plumbing equipment and the packaged modular boiler station;
- treatment plants KOU-20 D for treatment of surface (storm and melt) wastewater, as well as road washing water and a small volume of industrial wastewater (generated as a result of water use for water treatment plant washout);
- treatment plants UOPS-5 for treatment of surface (storm and melt) wastewaters, located at the site of additional gas ACU.

The water treatment facility KOU-60 is located outside CS Portovaya site. This facility treats all drain waters from CS site. The drain water discharge system include under-drainage (under CS site) and site perimeter drainage (along the outside perimeter of CS site).

The consolidated flow of treated household and surface wastewater is discharged to the nearest water course the Portoviy Creek 1.4 km long to the Portovaya bay of the Gulf of Finland

(outlet No. 1). The point of treated waste water inflow into the creek is located 1.2 km from the creek debouchment.

Treated drain wastewater and a small volume of wash water from the KOU 60D plant are also discharged into the Portoviy Creek through a canalized (water discharge) ditch 1.14 km long to the stream (outlet No. 2).

The Portoviy Creek is a first category fishery water body⁵.

The width of the water protection zone of the stream is 50 m as per the Water Code; the width of the protected shoreline belt is 20 m.

No structural subdivisions of "Portovoye" branch are located within the boundaries of the water protection zone.

The balance of water consumption and wastewater discharge for the compressor station is shown in Table 8.1.

The balance of water consumption and wastewater discharge at CS "Portovaya" industrial site for the period 2018-2022 is shown in Fig. 8.2.

The diagram of water consumption and wastewater discharge with sampling points for wastewater and the Portoviy Creek natural water is shown in Fig. 8.3.

⁵ A first category is established on the basis of state water bioresources monitoring data for the fishery water bodies used for production (fishing) of water bioresources, which are not considered as highly valuable or valuable species, and are the places of water species reproduction, wintering, mass feeding, artificial reproduction, and way of migrations.

Table 8.1.

Balance of water consumption and wastewater discharge for "Portovaya" CS for 2018-2023

Production	Type of used water	Water consumption, thous. m ³ /year							Wastewater discharge, thous.m ³ /year																
		Total	For industrial needs			For household needs	Irr retrievable consumption	Total	Wastewater volume, re-used	Outlet № 1 to the Portoviy Creek		Outlet № 2 to the Portoviy Creek													
			Fresh water	Circulating water	Re-use water					KOU-20D	KOU-40BIO														
													Including potable quality												
3	4	5	6	7	8	9	10	11	12	13	14														
Household needs																									
For employees	water well	2,0599					2,0599					2,0599													
Canteen	water well	0,8892					0,8892					0,8892													
Medical post	water well	0,0217					0,0217					0,0217													
Industrial needs																									
Boiler station																									
Regeneration filter of softening plant SF 25/2 – 9100 SXT	water well	0,0107	0,0107	0,0107								0,0107													
Cooling of sampler	water well	0,00003	0,00003	0,00003								0,00003													
System feed and network filling*	water well	0,0154	0,0154	0,0154							0,0154														
Maintenance of pipelines and boilers in the boiler	water well	0,0053	0,0053	0,0053								0,0053													

Production	Type of used water	Water consumption, thous. m ³ /year							Wastewater discharge, thous.m ³ /year			
		Total	For industrial needs			For household needs	Irrecoverable consumption	Total	Wastewater volume, re-used	Outlet № 1 to the Portoviy Creek		Outlet № 2 to the Portoviy Creek
			Fresh water	Circulating water	Re-use water					KOU-20D	KOU-40BIO	
3	4	5	6	7	8	9	10	11	12	13	14	
1	2											
house *												
Potable water treatment plant (DWTP) -2.0												
Cleaning filters (washing)	water well	0,5944	0,5944	0,5944						0,5944		
Sorption filters (washing)	water well	0,2153	0,2153	0,2153						0,2153		
Washing of membrane filters	water well	0,1622	0,1622	0,1622						0,1622		
Wastewater treatment facilities needs												
KOU 40BIO	water well	0,0377	0,0377	0,0377						0,0377		0,0377
KOU 20D	water well	0,082	0,082	0,082						0,082		
KOU 60D	water well	0,298	0,298	0,298						0,298		
UOPS-5	water well	0,0299	0,0299	0,0299						0,0299		0,0299

Production	Type of used water	Water consumption, thous. m ³ /year							Wastewater discharge, thous.m ³ /year			
		Total	For industrial needs			For household needs	Irrecoverable consumption	Total	Wastewater volume, re-used	Outlet № 1 to the Portoviy Creek		Outlet № 2 to the Portoviy Creek
			Fresh water	Circulating water	Re-use water					KOU-20D	KOU-40BIO	
3	4	5	6	7	8	9	10	11	12	13	14	
1	2											
Chemical laboratory												
Washeries	water well	0,0184	0,0184	0,0184						0,0184		
Distiller	water well	0,003	0,003	0,003							0,003	
Redistiller	water well	0,0001	0,0001	0,0001							0,0001	
Power generator unit needs (coil cooling of water distiller ДЭ-4 in generator unit CD-1)	water well	0,003	0,003	0,003							0,003	
Machinery repair shop (equipment washing plant)	water well	0,0006	0,0006	0,0006							0,0006	
Washing of equipment on the CS site (without additional gas ACU site)	water well	0,1416	0,1416	0,1416							0,0708	
Washing of equipment on the additional gas ACU site	water well	0,0648	0,0648	0,0648								0,0324
Washing of the additional gas ACU site	water well	2,2372	2,2372	2,2372							1,1186	1,1186

Production	Type of used water	Water consumption, thous. m ³ /year							Wastewater discharge, thous.m ³ /year				
		Total	For industrial needs			For household needs	Irrecoverable consumption	Total	Wastewater volume, re-used	Outlet № 1 to the Portoviy Creek		Outlet № 2 to the Portoviy Creek	
			Fresh water	Circulating water	Re-use water					KOU-20D	KOU-40BIO		
													Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Washing of CS site (without additional gas ACU site)	water well	9,2823	9,2823	9,2823				4,64115	4,64115		4,64115		
TOTAL along the industrial site		16,1727	13,2019	13,2019			2,9708	5,8784	10,2944		6,0829	3,0306	1,1809
Surface (storm and melt) wastewater from additional gas ACU site													
Surface (storm and melt) wastewater from CS site (without additional gas ACU site)													
Drain water													
In total													
1236,2363													
1103,76													
114,9505													
7,2314													
124,064													
1112,1723													

Note: Preliminary treatment of storm, melt, road washing and small amount of industrial wastewater from additional gas ACU site is performed on UOPS-5, and then directed to KOU-60D plan

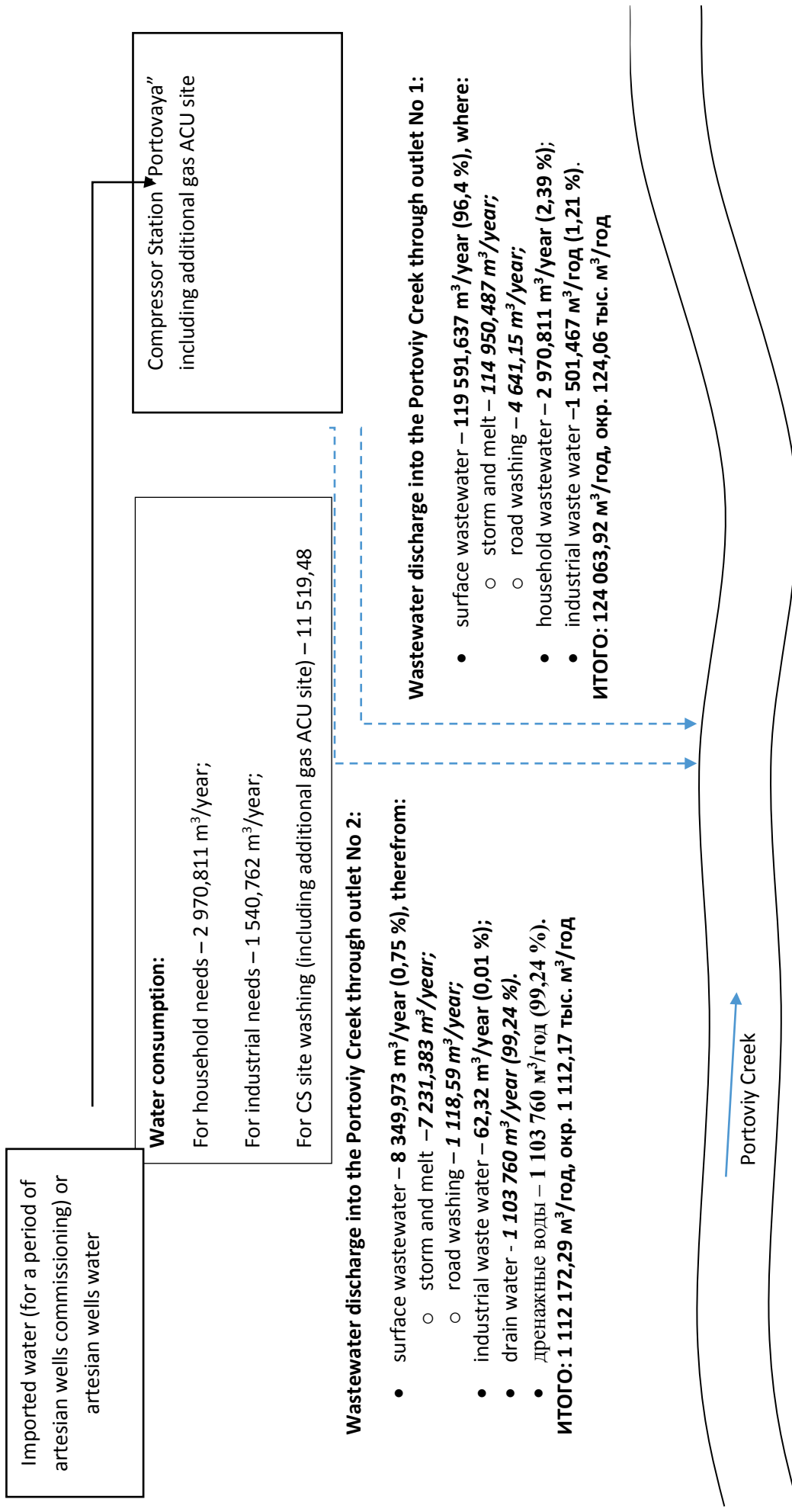


Fig. 8.2.

Balance diagram of water consumption and wastewater discharge at CS "Portovaya" site for the period of 2018-2023.

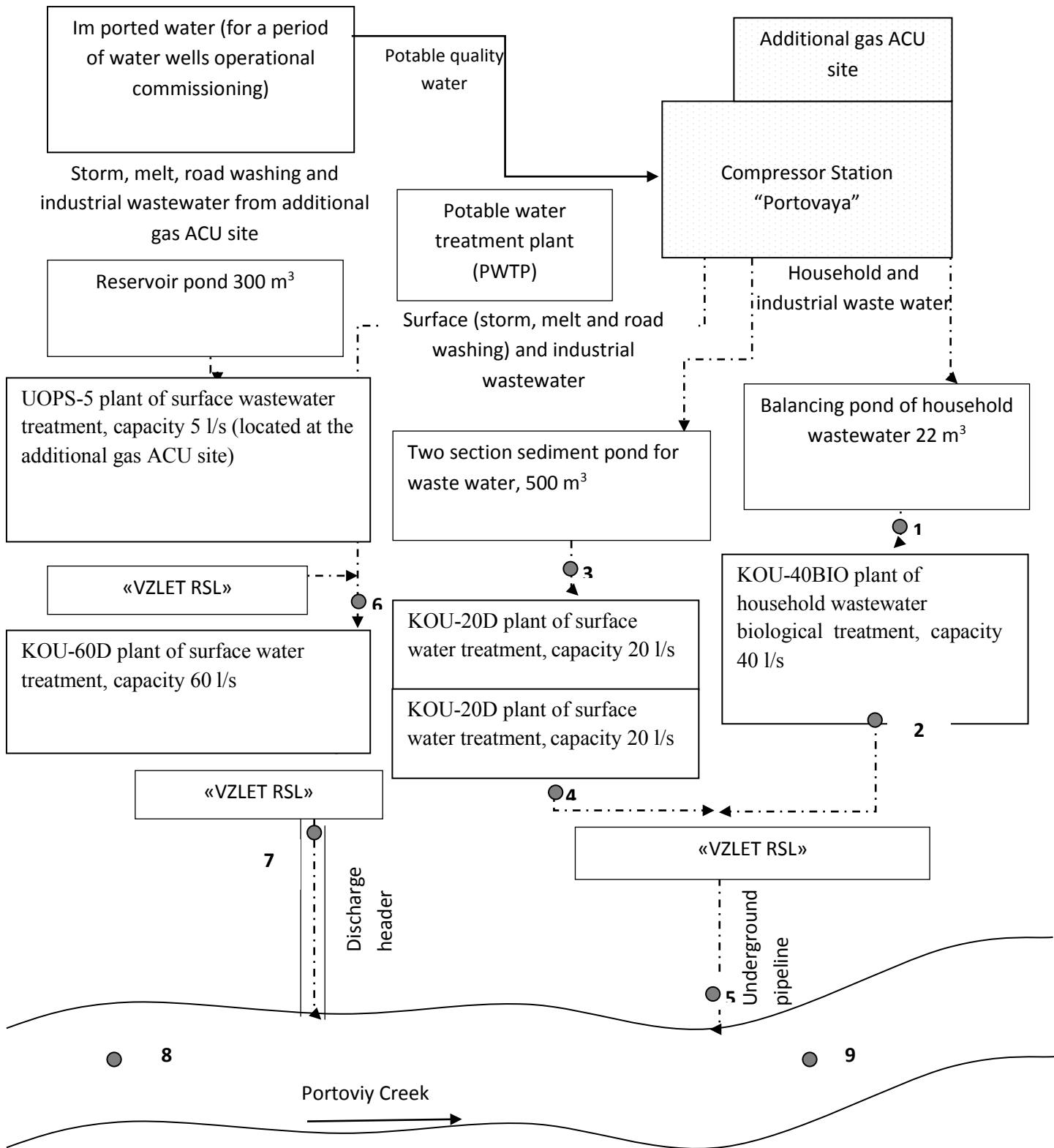


Fig. 8.3.

Diagram of water consumption and wastewater discharge with sampling points of wastewater and Portoviy Creek natural water

3.2 Impact of CS "Portovaya" on subsurface water

The main types of impact of CS "Portovaya" on subsurface water throughout the operating period are as follows:

- possible manifestation of damming effect⁶ and subsoil waterlogging;
- contamination of subsurface water aquifer by wastewates;
- contamination of water-bearing horizon as a result of failure to comply with the

sanitary rules and norms at operation of artesian wells.

As a result of CS "Portovaya" operation, the topmost part of the hydrogeologic section will be affected which includes the aeration zone, the subsurface aquifer, and some part of the underlying relative aquiclude.

Hypothetical contaminations of the zone of aeration of water-bearing soils and subsurface water with soluble or insoluble POL components during CS operation will be local (it may occur in parking areas, POL storage locations) and insignificant.

4 MANAGEMENT AND MONITORING

Measures aimed to prevent and mitigate a negative impact of the facility operating activity on the condition of surface and subsurface water shall be implemented on CS "Portovaya" site.

Such measures include:

- administrative and technical measures;
- IEC (industrial environmental control) of water bodies protection.

Administrative and technical measures aimed at the reduction of CS "Portovaya" impact on the condition of surface and subsurface water are given in table 8.4.

IEC of water bodies protection is provided by industrial environmental monitoring – regular control of waste water quality, underground water table, operating efficiency of waste water treatment facilities.

⁶ Damming effect is a rise of subsurface water levels in front of an obstacle across the flow and fall behind the obstacle, due to the blockage of the subsurface water filtration flow. Depending on hydrogeological properties of the blocked aquifer and the relevant utility dimensions the head may vary from several centimeters to several meters and may result in deformations of the soil mass, waterlogging of the site and nearby buildings and facilities, as well as other adverse consequences.

Table 8.4.

Plan of administrative and technical measures for mitigation of negative impact of "Portovaya" CS on surface and subsurface water condition

Purpose	Action	Action item lead	Action frequency
Prevention of subsurface water pollution	Arrangement of blind fencing around water supply wells (pump stations above artesian wells) sites and construction of access roads with improved coating	Head of power and water supply (PWS) department	Continuously
	Equipping of water supply well heads with a structure which ensures full sealing and excludes penetration of pollutants into the intertubular and annular spaces of the wells		
	Perform timely repairs of storage tanks for diesel fuel, and hard floor coating at diesel fuel warehouse	Head of PWS department	
	Compliance with the requirements for operation of locations of temporary waste accumulation SanPiN 2.1.7.1322-03 "Hygienic requirements to disposal and control of production and consumption waste" STO Gazprom transgaz St.Petersburg r 32-03-04-2012 production and consumption waste". Handling procedure.	Environment protection engineer, Head of PWS department, Head of GCS department	
	Compliance with handling procedure for hazardous chemical substances including petroleum, oil and lubricants (POL) transportation and storage regulations Interindustry safety rules at operation of petroleum tank depot, POL warehouses, stationary and mobile refueling stations (POT R M-021-2002) RF Federal Law # 116 dated 21.07.1997 "On industrial safety of hazardous industrial facilities"	Environment protection engineer, Head of PWS department, Head of GCS department, head of DFFS department, head of GPTC department	
Prevention of surface water pollution	Separation of water supply networks into household and fire water supply lines, their maintenance in good working order	Head of PWS department	Continuously

Purpose	Action	Action item lead	Action frequency	
	Separation of sewage systems into household, industrial, and rain water systems, their maintenance in good working order	Head of PWS department		
	Compliance with regulations on handling of hazardous chemical substances, including petroleum, oil, and lubricants, in the process of transportation, storage, and use thereof Interindustry safety rules at operation of petroleum tank depot, POL warehouses, stationary and mobile refueling stations (POT R M-021-2002) RF Federal Law # 116 dated 21.07.1997 "On industrial safety of hazardous industrial facilities"	Environment protection engineer, Head of PWS department, Head of GCS department, head of DFFS department, head of GPTC department		
	Compliance with regulations on handling of hazardous waste, including liquid waste RF Federal Law # 89 dated 24.06.1998 "On production and consumption waste"; SanPiN 2.1.7.1322-03 "Hygienic requirements to disposal and control of production and consumption waste"	Environment protection engineer		
	Ensuring of full sealing of clean water tanks in the household water pumping station, and effective circulation and exchange of the whole water mass in those tanks to exclude deposition of sediments and emergence of fouling	Head of PWS department		
	Cleaning of generated wastewater to meet the required quality standards	Head of PWS department; Environment protection engineer		
	Quality control of treatment facilities performance	Environment protection engineer		
	Maintenance of household, industrial, storm and drain wastewater treatment facilities in good working order	Head of PWS department		
	Periodic cleaning of drain ducts and water discharge ditches	Head of PWS department		As necessary
	Consumed water quantity control	Water consumption accounting using flow rate meters		Head of PWS department
Rational use of	Re-use of treated surface wastewater	Head of PWS	As necessary	

Purpose	Action	Action item lead	Action frequency
water resources	for site watering	department	
	Control of underground water table	Head of PWS department; Environment protection engineer	

4.1 SURFACE WATER CONTROL

A purpose of surface water control is to check the compliance of the quantity of polluting substances contained in natural water with the limits of permissible discharge and prevent the negative impact of wastewater discharge on the environment.

Surface water control is performed by way of selection and further analysis of samples of natural water and wastewater by efforts of an accredited laboratory.

4.1.1. "PORTOVAYA" CS WASTEWATER AND NATURAL WATER CONTROL

Wastewater and natural water control is performed in compliance with the “Program of regular observations of a water body and its water protection zone” approved by the Neva-Ladoga Basin Water Directorate (hereinafter referred to as the Program).

Wastewater control is performed in nine points. Samples of the following wastewater flows are subject to control:

- wastewater entering household wastewater biological treatment facilities and discharged therefrom in a treated condition;
- wastewater entering storm water treatment facilities and discharged therefrom in a treated condition;
- consolidated effluent flow discharged into the Portoviy Creek (outlet No. 1);
- drain water entering treatment facilities and discharged therefrom in a treated condition into the Portoviy Creek (outlet No. 2).

Control of natural water from the Portoviy Creek is performed in two points: background and control ones, located 20m upstream and downstream of outlets Nos. 1 and 2.

Control of sea water (the Gulf of Finland water area) is performed in the Portovaya Bay at one point: in the area of water intake for fire-fighting needs.

Wastewater and natural water control is performed with respect to hydrochemical and epidemiological (microbiological and parasitological) parameters.

In addition, the Program provides for the control of condition of the soil of the water protection zone, including microbiological and parasitological control (at one point: in the area of treated wastewater discharge into the Portoviy Creek), as well as the monitoring of morphometric and hydrological parameters of the Portoviy Creek.

The frequency of control, the test parameters, and the sampling points are described in Appendix 13 (Industrial Environmental Monitoring) to this Manual.

Wastewater and natural water control points are shown in Figure 8.3.

Russian standards of pollutant content in treated wastewater (as per GN 2.1.5.689-98 Maximum permissible concentrations (MACs) of chemicals in the water of facilities used for household potable and recreation purposes, and SanPiN 2.1.5.980-00 Hygienic requirements to surface water protection) as well as international standards (as per the General EHS Guidelines of the International Finance Corporation) are given in Table 8.5.

Standards of permissible discharge of pollutants and microorganisms from CS "Portovaya" to the Portoviy Creek are given in Table 8.6.

Table 8.5.

Russian and international requirements to content of pollutants and treated wastewater

Parameter designation	Unit of measurement	Russian standard MAC/mg/l	International standard mg/l
Hydrogen ion exponent, pH	pH unit	6,5-8,5	6-9
Suspended substances	mg/dm ³	10,25	50
Dry residue	mg/dm ³	1000	
BOD ₅	mgO ₂ /dm ³	3	20
COD	mg/dm ³	30	125

Parameter designation	Unit of measurement	Russian standard MAC/mg/l	International standard mg/l
Total nitrogen	mg/dm ³	-	10
Ammonium ions	mg/dm ³	0,5	
Nitrite ions	mg/dm ³	0,08	
Nitrate ions	mg/dm ³	40	
Total phosphorus	mg/dm ³		2
Phosphate (to phosphorus)	mg/dm ³	0,2	
Chloride ions	mg/dm ³	300,0	
Sulfate ions	mg/dm ³	100	
Anion-active surface compounds	mg/dm ³	0,01	
Petroleum products	mg/dm ³	0.05	10
Total coliform bacteria	CFU /100 ml	100	400
Coliphages	PFU/100 ml	100	
Thermal tolerant coliform bacteria	CFU/100 ml	100	
Viable worm ova	-	Should be absent in 25 l of water	
Viable cysts of enteric pathogenic protozoan	-	Should be absent in 25 l of water	

Table 8.6.

Standards of permissible discharge of pollutants and microorganisms into the Portoviy Creek

Parameter designation	Approved permissible discharge standard, t/year					
	Outlet No. 1 (Wastewater category: storm, melt, road washing, industrial and household. Wastewater flow rate: 124,06 thous. m ³ /year, 273,35 m ³ /h) (max.)			Outlet No. 2 (Wastewater category: storm, melt, road washing, industrial and drain; Wastewater flow rate: 1112,17 thous. m ³ /year, 160,90 m ³ /h) (max.)		
	t/year	mg/l	t/year	t/year	mg/l	
BOD _{full}	0,372	3,0	3,125		2,81	
COD	3,722	30,0	-		-	
Suspended substances	0,393	3,17	3,337		3,0	
Ammonium ions	0,062	0,5	0,512		0,46	
Nitrate ions	0,008	0,066	-		-	
Nitrite ions	2,531	20,4	-		-	
Phosphate (to phosphorus)	0,025	0,198	-		-	
Petroleum products	0,006	0,046	0,038		0,034	
Anion-active surface compounds	0,011	0,089	-		-	
Dry residue	43,173	348	173,499		300,0	

Parameter designation	Approved permissible discharge standard, t/year		
	Outlet No. 1 (Wastewater category: storm, melt, road washing, industrial and drain; Wastewater flow rate: 124,06 thous. m ³ /year, 273,35 m ³ /h) (max.)	Outlet No. 2 (Wastewater category: storm, melt, road washing, industrial and drain; Wastewater flow rate: 1112,17 thous. m ³ /year, 160,90 m ³ /h) (max.)	
Chloride ions	9,677	78	333,651
Sulfate ions	2,320	18,7	-
Microorganisms:	Permissible limit of microorganisms discharge, units per hour		
Total coliform bacteria (CFU/100 ml), maximum	273 350 000		804 500 000
Coliphages (PFU/100 ml based on phage M2), maximum	273 350 000		16 090 000
Thermal tolerant coliform bacteria (CFU/100 ml), maximum	273 350 000		160 900 000
Agents of infections	Absence		Absence
Viable worm ova	-		-

4.2 SUBSURFACE WATER CONTROL

A purpose of subsurface water monitoring is to obtain regular data required for subsurface water use control, protect subsurface water from pollution and depletion, prevent the negative impact of water intake on the environment, and control possible impact of subsurface water on CS "Portovaya" utilities.

Subsurface water monitoring is performed in two main disciplines:

- quantitative chemical and radiological control of water from artesian wells;
- control of the level and temperature conditions of subsurface and ground water.

Subsurface water control is performed by efforts of a third-party accredited laboratory.

4.2.1. Artesian well water control

Sources of household and potable water supply to CS "Portovaya" are two water-intake artesian wells (one operating well and one standby well).

Water treatment equipment of the potable water treatment plant (DWTP) is installed to bring the artesian water quality to conformity with the requirements of SanPiN 2.1.4.1074-01 "Potable water. Hygiene requirements for quality of water of centralized potable water supply system. Quality control. Hygiene requirements for safety of hot water supply systems".

The water treatment equipment is supplied by Techno-Eco LLC, St. Petersburg.

Control of water from artesian wells is performed by sampling after preliminary pumping and further analysis of quantitative chemical composition of water samples, and analysis of organoleptic, generalized, microbiological, and radiological parameters.

The frequency of control and the test parameters are described in Appendix 13 to this Manual.

Control of radiological parameters

The permissible dose of radon-222 in potable water is 60 Bq/kg as per SanPiN 2.1.4.1074-01 Potable water. Hygiene requirements for quality of water of centralized potable water supply system. Quality control. Hygiene requirements for safety of hot water supply systems. In view of the fact that the specific activity of radon-222 in the water from artesian wells is 340 Bq/kg, a radon removal station is installed as part of DWTP equipment in the area of water intake wells.

The operating principle of the station is as follows: water from the well enters the aeration tank where the water is agitated by compressed air. Radon evolving in the aeration process is

removed to the atmosphere through an exhaust stack which is 4 m high. The operating mode of the station is periodic.

Water from artesian wells becomes safe from the radiation point of view after treatment at the radon-222 removal station; radon activity is reduced to the standard value.

Values of radiological parameters of water from artesian wells before and after treatment at the radon removal station are given in Table 8.7.

Table 8.7.

Values of radiological parameters of water from artesian wells before and after treatment at the radon removal station

Radiological parameter	Standard, maximum, Bq/kg	Parameter value in water from well No. 1		Parameter value in water from well No. 2	
		Before treatment at the radon removal station	After treatment at the radon removal station	Before treatment at the radon removal station	After treatment at the radon removal station
Specific total alpha activity (A_α)	0.2	0.16	0.050	0.08	0.020
Specific total beta activity (A_β)	1.0	0.26	0.11	0.03	<0.36
Radium-226	0.49	0.022	0.013	0.016	0.015
Radium-228	0.20	0.0024	<0.002	0.015	0.0034
Lead-210	0.20	0.012	0.006	0.041	0.0082
Polonium-210	0.11	0.0026	0.006	0.010	0.0071
Uranium-238	3.0	0.0029	0.006	0.010	0.0072
Radon-222	60	98	<3	101	<3

4.2.2. Hydrogeological model of subsurface water travel

The license water withdrawal is 50 m³ per day at the CS Portovaya water-intake which consists of two artesian wells (operating and standby) penetrating the aquifer system of rock fracture of crystalline basement.

The area of water intake location is confined to the highly fractured zone of crystalline rock which is limited to the tectonic fault extended in the north-west direction. The width of fractured zone is 300-400m, the depth of fractured strata bottom makes 75-80 m. Static head water level came to stay at a depth of 10,0 m (absolute elevation 17,0 m)

The thickness of quaternary deposits in the area of water intake is 30 m. In the section a 10-meter strata of lake and glacial deposits isolating the underlying aquifer system of rock fracture in crystalline basement from overlying quaternary aquifer of ground water is visible. A 5-meter difference in static levels of aquifer at the time of carrying out the search works confirms it.

Water intake wells penetrate the aquifer system of crystalline basement rock. The influence of water intake on the environment is expressed in formation of the depression cone of subsurface water around active water intake. The depression cone is formed in the aquifer system of crystalline rock fracture.

In the process of hydrogeological model creation the calculation of the depression cone from the predictive water intake operation in CS Portovaya has been performed for assessment of its limited position. The depression cone is formed in the aquifer, limited to the upper fractured zone of crystalline rocks. According to the plan the calculated depression cone presents an irregular ellipsis stretched-out from the north-east (watershed line) to the south-west direction (the area of regional discharge – Gulf of Finland). The length of the depression cone made 4,5 km, and the width – 3,3 km. Maximum expected level reduction in the third calculated layer directly at the artesian well of water intake was 5,73 m and 3,51 m near the area of water intake.

The current hydrogeological monitoring includes only observations in boreholes and wells, penetrating the quaternary aquifer. The level position of ground water of quaternary aquifer is closely connected with the relief and varies in several meters under the ground surface depending on the number of precipitations (at absolute elevation 40-41 m at CS Portovaya site and 4,0-4,5 in the area of Bolshoy Bor settlement). At the CS Portovaya water intake the static subsurface water levels of two aquifer systems differ by 5,0 m, that confirms the absence of the direct hydraulic connection right near the water intake wells.

The monitoring observations results from before the artesian water intake wells were put in operation, characterize the natural mode of filtration of ground waters of the quaternary aquifer system in the area of water intake, CS “Portovaya” site and the settlement of Bolshoy Bor.

The results of hydrogeological simulation confirm the existence of regional subsurface water flow, discharged into the Gulf of Finland. A source of recharge of subsurface water is atmospheric precipitations and discharge goes into the local river system, lakes, marsh lands and the Gulf of Finland.

In the first calculated layer (quaternary rock aquifer) the depression cone is also formed from the water intake operation, maximum level reduction was 1,02 m. The border of the depression cone passes close to the settlement of Bolshoy Bor, and its maximum influence on the subsurface water level in the area is just a few centimeters, and is not more than 0,1 m and, which is less than the season variations as per monitoring data.

The influence of water intake operation on the sources of local water supply is insignificant, the predictive reduction of subsurface water level in the settlement of Bolshoy Bor does not exceed 10 cm and this is significantly less than the season variations of ground water levels of the quaternary aquifer system as per monitoring observation data.

Predicted influence of water intake operation on overall work balance in the area is insignificant. Discharge of rivers and marsh lands are 99,9 and 99,96 respectively, against natural discharge as a result of filtration, and discharge of subsurface water into the Gulf of Finland decreases up to 7476 m³ per day (i.e. 99,55% against natural discharge).

Model description.

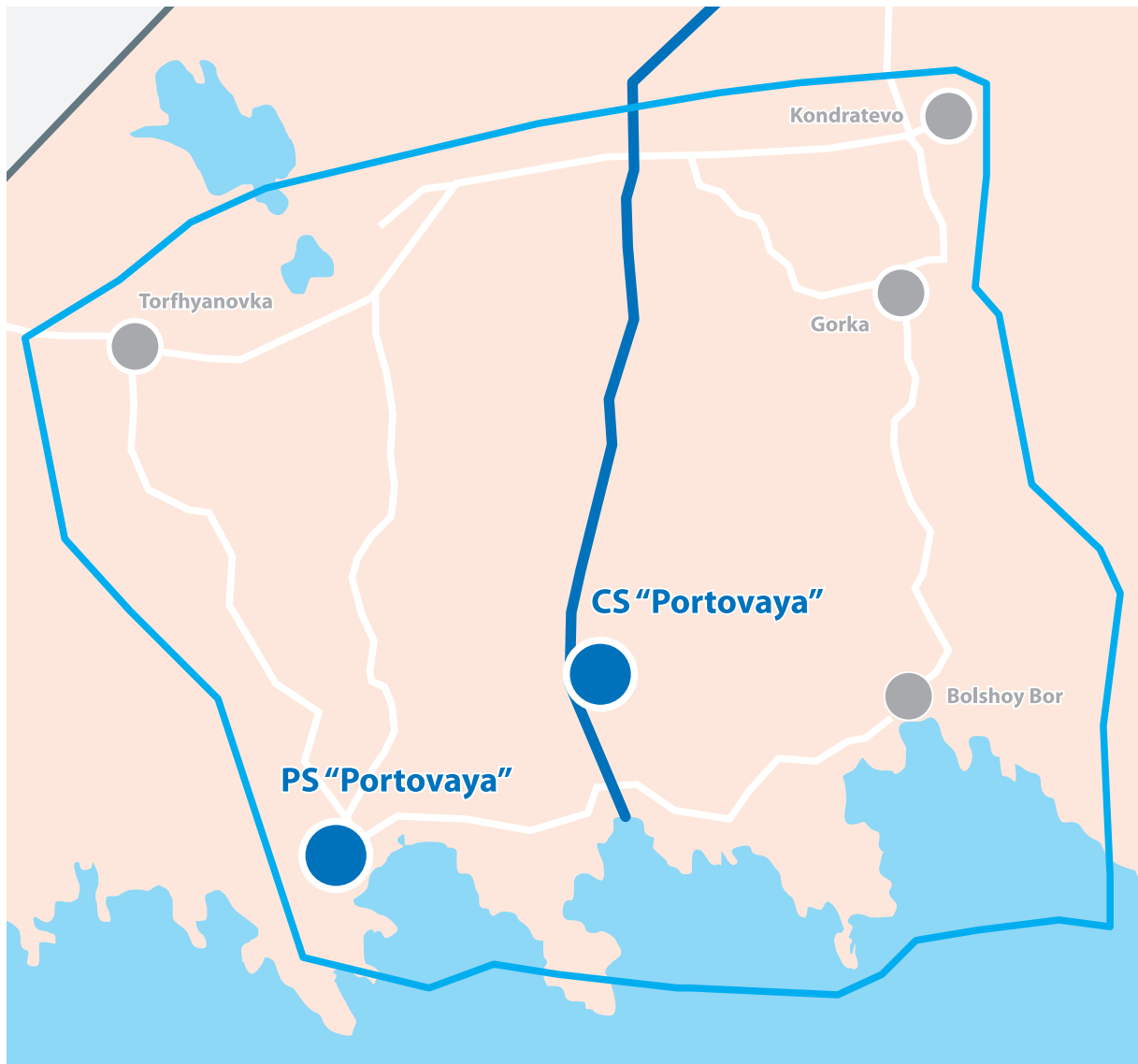
The model was created using MODFLOW (Harbauf&McDonald, 1996) which allows to simulate filtration of subsurface water in 3-dimensional position on the bases of the balance diagram allowing to control convergence of decisions not only on water head but on water discharge as well.

Data preparation for simulation was carried out using a freely distributed PMWIN 5.3 program complex – the graphic preprocessor for MODFLOW which allowed to create geo-filtration models and analyse the results of calculations in the graphic mode.

Boundaries of simulation area are shown in figure 8.8.

Figure 8.8.

Boundaries of simulation area



Limit position of depression cone from the CS Portovaya water intake operation for respectively the first and third from the surface calculated layer is shown in Figures 8.9 and 8.10.

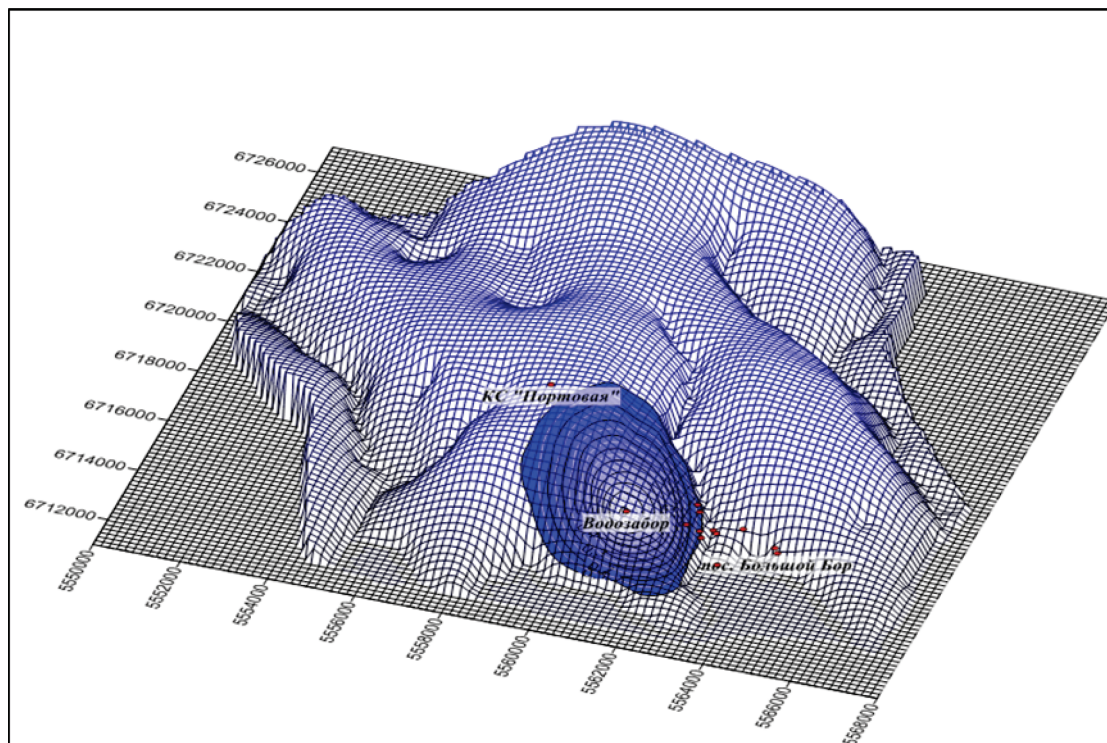


Figure 8.9. Limit position of depression cone from the CS Portovaya water intake operation (1st from surface calculated layer– quaternary aquifer)

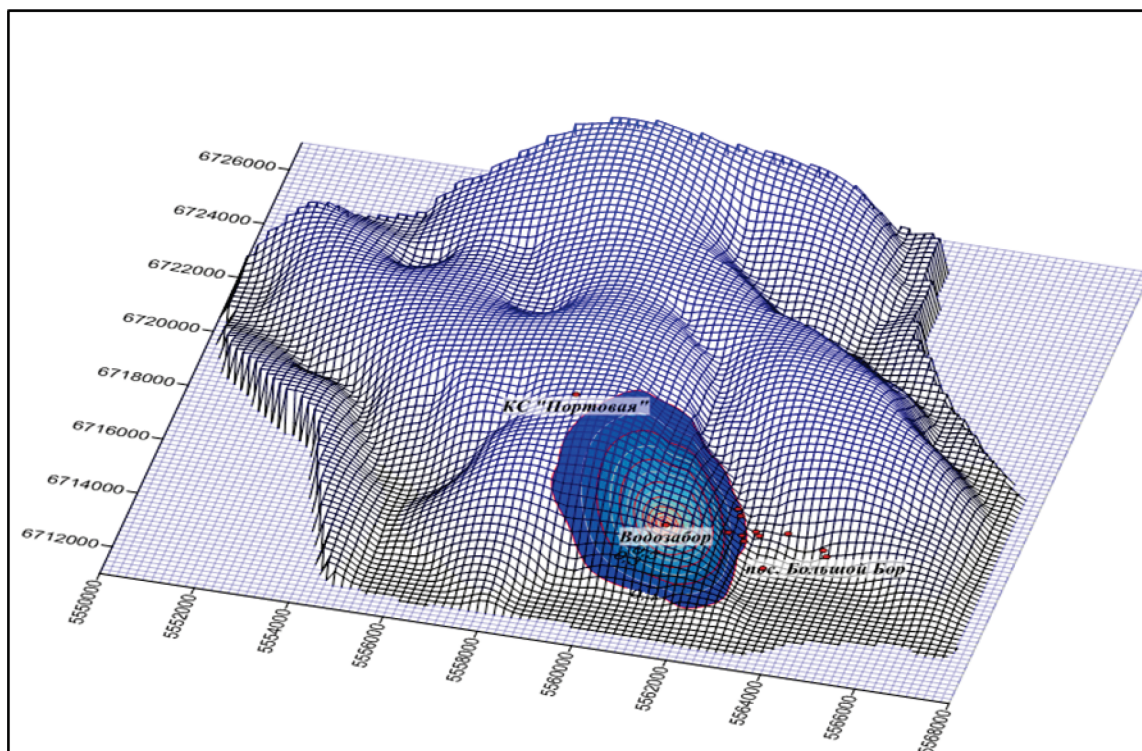


Figure 8.10. Limit position of depression cone from the CS Portovaya water intake operation (3rd from surface calculated layer– aquifer system of fractured crystalline rock basement)

4.2.3 Control of subsurface and ground water level and temperature condition

The subsurface and ground water levels and temperature mode are controlled for the purpose of creation and calibration of hydrogeological model of subsurface water flow.

The necessary parameters are controlled every quarter of the year in five wells in the area of Bolshoy Bor settlement which is the nearest inhabited location to CS "Portovaya".

The control procedure is described in Appendix 13 to this Manual.

Appendix 32-03-06-01-09

Impact management plan specially protected natural territories

1 Purpose

A purpose of the Specially Protected Natural Territory Impacts Management Plan is to identify potential impacts on the environmental components, which can arise from operation of linear section of the North-European gas pipeline, and develop actions to minimize these impacts.

The Specially Protected Natural Territory Impacts Management Plan should be considered jointly with other plans of the Company:

- Flora and Fauna Impact Management Plan.
- Industrial Environmental Monitoring Plan.
- Local Community Impact Management Plan.

2 Statutory and other requirements

The Specially Protected Natural Territory Impacts Management Plan has been developed in compliance with IFC Performance Standard 6 "Biodiversity Conservation and Sustainable Natural Resource Management".

A purpose of applying IFC PS6 to the Project is to protect and preserve the biodiversity.

Identification of risks and impacts shall consider the direct and indirect impacts on the biodiversity and environmental system services relating to the Project as well as disclose the substantial residual impacts. Identification of risks and impacts consider the relevant hazards to the biodiversity and environmental system services, while special attention is paid to such issues as deterioration or loss of life forms habitat and contamination of the environmental components.

Where the Project is within the limits of an area protected by law or internationally recognized natural area, the Company is required:

- make sure that the intended activities in such areas is permitted by law;
- operate in a manner complying with the management plan recognized by the government in respect of such areas;
- consult with the agencies financing and managing the SPNT, with the Project-affected communities and other parties concerned;
- implement, where necessary, additional programs to achieve the nature protection goals. In particular, monitoring of project impacts on the SPNT.

3 Project activity impacts on SPNT

Within a section of **600 km – 920 km**, the North-European gas pipeline runs in the area of existing regional complex wildlife area "Rakoviye Ozera" (Crayfish lake).

The wildlife area "Rakoviye Ozera" is located in Vyborgsky District of Leningrad Region, 40km to the south-east of Vyborg along the Eastern Vyborg Highway between Streltsovo, Klimovo, and Granitnoye settlements. The surface of wildlife area is 9700 ha, of which 600 ha is water area of lakes.

An outline map of the wildlife area is presented in Figure 9.1.

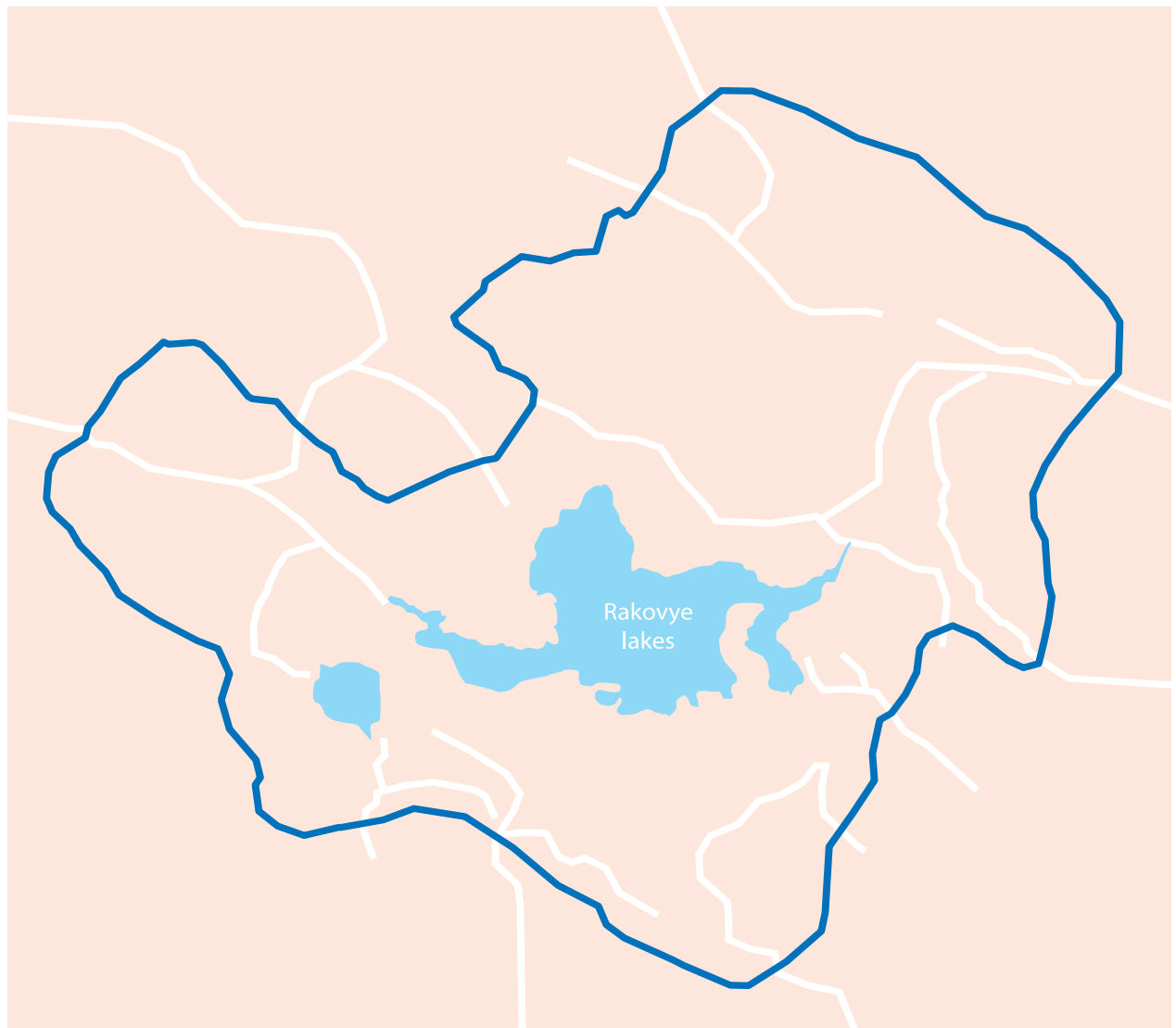


Figure 9.1.

Outline map of the wildlife area "Rakoviye Ozera" (Scale 1:10000)

The specially protected objects include:

- water system of Rakoviye Ozera and water path between them;
- natural complexes of Bolshoye Rakovoye and Okhotnichye Lakes;
- mass nesting and migration stopover places of water fowl and aquatic birds;
- fish spawning areas;
- rare flora species: meadow pasqueflower, monofoliolate orchis, awlwort, prince's pine, tussock sedge, cyperus-like sedge, baneberry, bitter pea, water dock, flowering rush, as well as mosses;

- rare fauna species: black-throated diver, red-necked grebe, bittern, barnacle goose, grey-lag goose, lesser white-fronted goose, whooper swan, Bewick's swan, gadwall, pintail, osprey, hen-harrier, spotted eagle, golden eagle, white-tailed eagle, peregrine, water rail, corncrake, barred warbler, curlew, slender-billed curlew, stock-dove, white-backed woodpecker.

The North-European gas pipeline route runs to the wildlife area "Rakoviye Ozera" across the territory of Krasnoleskoye Forest District (Sq. No. 8) of Roshchino Forestry Administration, then crosses a flow path between the Glubokoye Lake and Okhotnichye Lake, crosses a motor way Streltosovo-Pervomaiskoye within the segment where the motor road intersects with an unpaved road leading to a recreation center at the Okhotnichye Lake. Then it extends to the north across an open territory (meadow) and reaches a man-made territory accommodating linear facilities such as power transmission lines, cables, and gas pipeline RoW.

The lands where the North-European gas pipeline is laid are well-drained, soddy-podzolic and sandy soils of a different genesis.

The area in question offers coppice alder and birch brushing, pines are met separately.

The wildlife area visitors, including Project employees, should keep in mind that **the following is forbidden in the territory:**

- spring hunting for water fowl, autumn hunting without a special permit, winter hunting for wolves using traps and poisoned baits;
- fishing using commercial fishery gear;
- building fires and lighting of fire;
- operation of small-size motor boats on the Bolshoye Rakovoye and Okhotnichye Lakes, except for those of the guard service;
- visiting and staying at the lakes and within the lake coastal belt (200m) during a bird nesting period starting 1st of April till 15th of July ;

- motor vehicle traffic across the wildlife area, except for approach roads to sites assigned for parking lots;
- presence of dogs and cats beyond the limits of private peasant homesteads and farms;
- cattle ranging and driving within a water protection zone of lakes and bogs or within a 500m wide belt from the coastal line or bog edge when the water protection zone is not specified;
- undertaking of every type of felling, except for forest sanitation.

Basically, the following fauna and flora species can suffer due to direct interventions in the SPNT;

- hollow nest birds (woodpeckers, owls), species related to old-age trees (falcon species, some owls); mammals (chiropters, Russian flying squirrels, badgers, pine martens);
- water fowl and aquatic birds – wetland inhabitants;
- amphibians and reptilians (brown frogs, smooth snakes, slow-worms) – wetland and forest floor inhabitants;
- rare and protected species: meadow pasqueflower, monofoliolate orchis, awlwort, prince's pine, tussock sedge, cyperus-like sedge, baneberry, bitter pea, water dock, flowering rush, etc.

Big falcon and awl-like birds, as well as hen family species are especially susceptible to a wildlife disturbance, and their population density can decrease in the areas adjacent to the right-of-way.

4 Impacts management

Environmental management changes the natural state of the SPNT as it affects indirectly or directly the characteristics of material and energy flows in the components of natural and modified landscape.

Operation of linear section of the North-European gas pipeline can cause adverse impacts to the environmental components of the SPNT, in particular, the physical, chemical, and biological contamination of both air and water basins in the area and its vegetation mantle.

The Industrial Environmental Monitoring (IEM) of the SPNT "Rakoviye Ozera" was carried out during year 2014 – after completion of Project construction, by the third party – a special certified company accredited for these particular activities.

Within the IEM the survey of North-European gas pipeline route has been conducted at the section 774 km – 782 km crossing the SPNT "Rakoviye Ozera" and adjacent water bodies – Glubokoe and Okhotnichye Lakes.

The following surveys are included in IEM:

- quality of atmospheric air;
- noise impact levels;
- soil contamination along main gas pipeline;
- quality of natural waters and bottom silts in the water bodies in terms of chemical and hydro biological parameters;
- condition of ichthyofauna in water bodies;
- condition of phytoplankton, zooplankton and zoobenthos in water bodies;
- condition of flora and fauna.

SPNT impact management plan is presented in Table 9.2.

Table 9.2.

SPNT impact management plan

Environmental components	Potential changes	Actions to mitigate adverse impacts
Atmosphere	<ul style="list-style-type: none"> - Air pollution with motor vehicle engine emissions - Noise effects of running motor vehicle engines during inspections of the gas pipeline status 	Undertake timely maintenance of motor vehicles and environmental control over contaminant emission levels.
Soil mantle	<ul style="list-style-type: none"> - Disturbance of a soil mantle - Activation of a sheet wash - Intensification of slope and ravine erosion 	Undertake actions to recover the disturbed soil mantle.
Vegetation mantle	<ul style="list-style-type: none"> - Disturbance of a vegetation mantle during the soil water erosion caused, in turn, by disturbance of the soil mantle 	Undertake actions to recover the disturbed soil mantle.
Fauna	<ul style="list-style-type: none"> - Human presence effects and noise from operation of engines during an inspection period 	Reduce the time of presence of maintenance personnel in the wildlife area.
Surface water	<ul style="list-style-type: none"> - Change of the suspended matter content in water - Change of the chemical composition of water - Change of the water biotic community conditions - Change of the water consumer properties. 	<ul style="list-style-type: none"> - Prevent water contamination by fuels and lubricants. - Comply with regulations for the water protection zones of water bodies.
Ground and subsurface water	<ul style="list-style-type: none"> - Change of the subsurface aquifer recharging conditions 	Prevent soil contamination by fuels and lubricants.

The results of monitoring performed in 2014 show the satisfactory condition of natural environments for all controlled parameters, and absence of Project negative impact to the environment within borders of area under consideration, i.e. SPNT "Rakoviye Ozera" and water bodies – Glubokoe and Okhotnichye Lakes.

Further monitoring of SPNT will be performed only in case of significant changes in the Project processes, which can cause an impact to the SPNT, but not more often than once in 5 years.

Appendix 32-03-06-01-10

Flora and fauna impact management plan

1 Purpose

A purpose of the Flora and Fauna Impact Management Plan is to identify possible types of impact from the operating activity of CS «Portovaya» and linear section of the North-European gas pipeline from Volkhovskaya CS to the Portovaya Bay on flora and fauna, and develop measures to manage and mitigate such an impact.

The Flora and Fauna Impact Management Plan should be considered in combination with other Plans of the Company:

- Atmospheric Emission Management Plan.
- Water Resources Management Plan.
- Waste Management Plan.
- Industrial Environmental Monitoring Plan.
- Specially protected environmental territory Impact Management Plan

2 Statutory and other requirements

The Flora and Fauna Impact Management Plan has been developed in compliance with IFC Performance Standard 6 "Biodiversity Conservation and Sustainable Management of Living Natural Resources".

According to the requirements of the standard, in the process of Company risks and impacts identification it is necessary to consider the project related direct and indirect impacts on the biological diversity and ecosystem services and identify any substantial residual effects. When identifying risks and impacts, it is necessary to consider the relevant threats to the biological diversity and ecosystem services; special attention should be paid to such matters as the loss of life forms habitat, deterioration of its condition and fragmentation, introduction of invasive alien species, excessive exploitation, hydrological changes, nutrient load, and environmental pollution.

As a first priority measure, it is recommended to avoid impacts on biological diversity and ecosystem services. When impacts could not be avoided, it is necessary to undertake measures to minimize them and restore the biological diversity and ecosystem services. Taking into account the difficulty of long-range prediction of project impacts on the biological diversity and ecosystem services, the Company should apply methods of adaptive management whereby the mitigation and management measures will take into account the changing conditions and monitoring results throughout the whole period of project implementation.

The impacts on flora and fauna are also regulated by the Federal Law of the Russian Federation No.7 "On protection of environment" dated 10.01.2002.

3 Evaluation of impact on flora and fauna from linear section of North-European gas pipeline from CS “Volkhovskaya” to the Portovaya Bay

3.1 Impact on flora

The environmental components could be affected in the process of operation of the North-European gas pipeline linear section from CS “Volkhovskaya” to the Portovaya Bay by the following adverse impact which, in its turn, may affect the condition of flora in area of facility location:

- atmospheric emissions of pollutants generated from process equipment operation, as well as gasoline and diesel fuel combustion products;
- environment pollution by wastewater (household, industrial, storm, drainage water);
- littering area with industrial and consumption waste (mainly household waste);
- impact associated with human activities (cutting of trees and bushes, poaching of vegetation in neighboring areas, machinery driving into the woods).

The hydrological conditions of the area may change in the process of operation of main gas pipeline linear section, which will promote changes in the composition of flora natural species and change of areal biological diversity.

In addition, there is an increased fire hazard for the flora of the surrounding area, since linear section of the North-European gas pipeline from CS “Volkhovskaya” to the Portovaya Bay is a complex of hazardous industrial facilities.

3.2 Impact on fauna

Negative impact on terrestrial fauna and ichthyofauna could be imposed in the process of operation of linear section of the North European gas pipeline from CS “Volkhovskaya” to the Portovaya Bay.

Impact on terrestrial fauna may be manifested mainly in transformation of wildlife habitats, as a result of:

- impact on flora (changing of vegetation types);
- human activity in previously undeveloped wildlife habitat areas;

- distribution of industrial and consumption waste (mainly household waste) in wildlife habitat areas;

- noise impact.

Impact on terrestrial fauna may also be manifested as follows:

- restless behavior of animals;
- unlawful hunting and devastation of nests and refuges;
- death of animals as a result of possible industrial accidents and fire;
- violation of food chains, topical and other chains in zoocenosis;
- change in faunal composition.

The quantity of typical forest animals in the area of the facility location may decrease, as a result of compressor stations' operation. Later on they could be replaced by other species.

Ichthyofauna may be affected, as a result of:

- discharge of "Portovaya" CS wastewater into the surface water body (the Portoviy Creek);

- change of the natural environment of water bodies in the process of construction and operation of main gas pipelines (MGPL) submerged crossings (disturbance of river beds and banks, development of bank erosion processes, increase of water muddiness, deposition of sediments in the river bed, etc.).

Impact on ichthyofauna may be manifested as follows:

- change in ichthyofauna species diversity;
- death of faunal forms.

4 Management and monitoring

Measures aimed at mitigation of possible negative impact of the Project operational activity on the condition of flora and fauna shall be implemented in the process of operation of the North –European gas pipeline linear section from CS “Volkhovsaya” to the Portovaya Bay.

Such measures include:

- administrative and technical measures;
- monitoring of flora and fauna.

Administrative and technical measures are described below in the table 10.1 of this Plan.

Industrial environmental control consists in carrying out of industrial environmental monitoring (IEM) of flora and fauna.

IEM of flora and fauna is performed in order to timely identify, prevent, and eliminate adverse effects from operation of the North –European gas pipeline linear section from CS “Volkhovsaya” to the Portovaya Bay with a view to preserve the biological diversity and ensure rational use of fauna and flora.

In case any rare and unique species of flora and fauna, listed in federal or regional Red Books of the Russian Federation, are identified, the monitoring of such species should be performed with special attention. Currently the preservation of rare and endangered fauna and flora species in the territory of the Russian Federation is provided by several Russian legislative acts and international conventions. In compliance with the Convention on Biological Diversity (Rio de Janeiro, 1992), the Russian Federation shall implement measures for preservation of rare and endangered fauna and flora species.

Table 10.1.

Fauna and flora impact management plan

Source of impact	Type of potential impact	Mitigation action	Action frequency	Action item lead
Maintenance of Linear part of main gas pipeline: construction-assembly and preparation works, repair works				
Operation of support equipment and vehicles: Atmospheric air pollution with pollutant discharge	Suppression of plant growth; change of wildlife habitat	Maintenance of process equipment and motor transport in good working order	Permanent ¹	Portovoye branch
		Compliance with hazardous waste handling regulations		
		Compliance with hazardous materials, including POL and petroleum products, handling regulations		
		Compliance with occupational health and industrial safety rules.		
Operation of support equipment and vehicles: noise impact	Distress of animals, non-seasonal migrations	Maintenance of process equipment and motor transport in good working order	Permanent	Portovoye branch
		Using equipment with noise insulation, wherever possible		
		Compliance with occupational health and industrial safety rules.		
		Restriction (if possible) of motor traffic along the MGPL route and	In the periods of animal migration	Portovoye branch

Source of impact	Type of potential impact	Mitigation action	Action frequency	Action item lead
		close to CS «Portovaya» in the periods of animal migration		
Operation of support equipment and vehicles: risk of spill and leaks of petroleum products and POL	Suppression of plant growth	Compliance with petroleum products and POL handling rules.	Permanent	Portovoye branch
Littering with industrial and consumption waste (mainly household waste)	Suppression of plant growth; change of wildlife habitat	Compliance with hazardous waste handling regulations (prevention of surrounding area contamination with industrial and household waste)	Permanent	Portovoye branch
Repair works (Hot (open fire) works: High fire hazard - Possibility of ignition and fire	Suppression of plant growth; change of wildlife habitat. Kill of some flora and fauna species.	Compliance with occupational health and industrial safety rules, fire safety regulations at hazardous industrial facilities	Permanent	Portovoye branch
Preparation and construction-assembly works: impact to the soil and topography (removal and storage of top soil, damages to microtopography caused by movements of construction machinery: grooves, trenches, tracks and etc.)	Deterioration of physical-mechanical and chemical-biological features of top soil, suppression of plant growth, kill of some flora species, distress of animals	Limiting (if possible) the time of equipment presence at work site. Parking off-duty vehicles and machinery in special locations	Permanent	Portovoye branch
		Forbidding the burning of vegetation		
		Strict compliance with work procedures		
Repair works to underwater crossings of	Change in ichthyofauna species	Restoration of land	If needed	
		Performance of works in spawning	Permanent	Portovoye branch

Source of impact	Type of potential impact	Mitigation action	Action frequency	Action item lead
main gas pipeline: impact to ecosystem of water bodies, damage to shore and channel bed of water body	diversity; kill of ichthyofauna forms; damage to vegetation	<p>season is forbidden</p> <p>Priority to perform works in drought period</p> <p>Compliance with water protection area rules (no vehicles and machinery parking, nor soil storage)</p> <p>Strict compliance with work procedures</p> <p>Performing shore protection activities</p> <p>Compensatory measures to ichthyofauna</p>	If needed	
Regular inspections of ROW by patrol lineman, casual inspections of linear part of main gas pipeline: Reckless acts of man	Poaching damage to vegetation, cutting of trees, disturbing of animals and birds, littering of the area with waste and etc.	<p>Regular briefings to all persons operating the Project facility (personnel of Portovoye branch and contractors)</p> <p>Observance of safety precautions and HS and Industrial safety rules when performing works on the MGPL linear section and CS Portovaya site</p>	As per established intervals	Portovoye branch
			Permanent	

Source of impact	Type of potential impact	Mitigation action	Action frequency	Action item lead
Protection of linear part of main gas pipeline				
Reckless acts of man	Poaching damage of plants, cutting of trees, disturbing of animals and birds, littering of the area with waste, etc.	Compliance with hazardous waste handling rules	Permanent	“North-West interregional security department of PC “Gazprom” in Saint-Petersburg
		Limiting motor vehicles traffic along linear part of main gas pipeline (when possible)		
		Regular briefings to personnel on compliance with HS and Industrial safety rules	As per established intervals	
<hr/> ¹ during work performance				

4.1 Flora monitoring

The objective of flora monitoring is the condition of vegetation communities, and primarily, the vegetation blanket.

Monitoring of vegetation blanket is performed on permanent observation sites (control points). Observation sites for monitoring have the following standard dimensions: 20 m x 20 m (in forest communities, wooded bogs) and 10 m x 10 m (in meadowlands, woodless bog areas, agro landscapes).

Monitoring of vegetation cover condition is performed by field inventory with the following parameters:

- general condition of vegetation (identification of mechanical violations of vegetation cover, forest stand blight);
- species diversity (including identification of weed and anthropophilous species);
- frequency, abundance, projective cover degree;
- observation of rare and unique vegetation communities (if any).

In order to obtain a complete information, the monitoring should be performed on sites during different seasons: late spring, early summer and early autumn.

The flora IEM program is set out in Appendix 13 (Industrial Environmental Monitoring Plan) to this Manual.

4.2 Fauna monitoring

The fauna monitoring objects are mammals, birds, reptiles, amphibians, and fish.

A purpose of fauna monitoring is to evaluate the condition of populations and spatial reactions of animals to man-induced impact exerted in the process of operation of the North – European gas pipeline linear section from CS “Volkhovsaya” to the Portovaya Bay.

Evaluation is based on the following parameters: species composition, magnitude of population, environmental and faunal structure of the population.

The fauna monitoring program is set out in Appendix 13 to the COEM (Appendix 13 – Industrial Environmental Monitoring Plan).

The fauna IEM organization plan is given in table 10.2.

The recommended monitoring periods are: from April till the first half of June for migratory aquatic birds, from mid-May till mid-June for birds in the reproduction season, from the second half of July till August for small mammals, reptiles, and amphibians in the reproduction season, during the warm half of the year for marine mammals.

The parameters of species wealth, diversity and stability of communities are estimated based on monitoring data on species composition and abundance of fauna.

Reduction of these parameters by 30 to 40% compared with the previous year values may be regarded as an adverse change. In such a case it is necessary to consider mitigation of the negative impact from MGPL linear section and CS «Portovaya» on fauna by way of implementation of various bioengineering measures: creating artificial nesting sites for birds, arranging feeding sites and salt licks, eliminating disturbance of soil and vegetation cover beyond the boundaries of the facilities, and etc.

In order to perform a complete monitoring of flora and fauna, it is necessary to involve the qualified specialists in the sphere of zoology, ornithology, and biology. The flora and fauna monitoring is performed by third party – the licensed company.

Table 10.2.

Fauna monitoring organization plan

Action	Observed parameter	Investigation method	Scope of investigation	Time of investigation
Observation of main animal species:	<p>Species composition, total population, abundance dynamics</p> <p>There are no requirements to provide data about total fauna population to RF control bodies. The Society performs this monitoring to the benefit of the Project, and the results are submitted only to Independent consultant. The fauna monitoring is performed by third party – a special company accredited for such activities. The surveys are performed visually. No damage/disturbance to fauna is caused.</p>			
mammals		Identification and examination of habitats	Creation of reporter network from among hunters, local zoologists and biologists	Throughout a year
reptiles		Route accounting	3 km routes in the main types of habitats	July – August
amphibians		Route accounting	3 km routes in the main types of habitats	July – August
marine mammals		Identification and examination of habitats	Observations in control areas of the Gulf of Finland water area	April – September
Observation of main bird species:	Species composition, total population, abundance dynamics	Route accounting	2-3 permanent 10 km routes in 3 groups of habitats (forest, field,	June – July
comprehensive accounting of birds (all species)				

Action	Observed parameter	Investigation method	Scope of investigation	Time of investigation
Observation of birds in migration periods			wetlands – if any)	March, September
Ichthyological monitoring (observation of fish species of commercial importance)	Species composition, ichthyofauna population dynamics, seasonal migration dynamics	Ichthyological survey	Fishing on control watersides The fish catches are performed in control areas of water bodies to establish which ichthyofauna species are typical for this water body. Ichthyological monitoring is performed by third party – a special company accredited for such activities. The caught samples are examined visually and upon completion of survey are released back into water body.	May – September
Observation of huntable animal species	Species composition, total population, abundance dynamics	Winter route accounting	3 km routes in main types of habitats	January – March
Observation of huntable bird species	Species composition, total population, abundance dynamics	Autumn route accounting	3 km routes in main types of habitats	September - October
Observation of animals and birds listed in Red Books	Species composition, total population, abundance dynamics	Route accounting	3 km routes in main types of habitats	May – September

Appendix № 32-03-06-01-11

Disturbed land recovery plan

1 Purpose

Purposes of the Disturbed Land Recovery Plan are as follows:

- evaluation of potential adverse changes in geological environment, topography and soils in the areas where the linear section of the North-European gas pipeline from CS “Volkhovskaya” to the Portovaya Bay is located, and in the area of CS "Portovaya" site;
- development of measures to manage impact from the North-European gas pipeline from CS “Volkhovskaya” to the Portovaya Bay on the geological environment, topography and soils.

The Disturbed Land Recovery Plan should be considered in combination with other Plans of the Company:

- Water Resources Management Plan.
- Waste Management Plan.
- Fauna and Flora Impact Management Plan.

2 Statutory and other requirements

As per the *Federal Law of the Russian Federation No.7 "On Environmental Protection"*, the natural environments subject to be protected against pollution, depletion, degradation, detriment, destruction, and other adverse effects of economic and other activities, include lands, underground resources, and soils.

As per the *Land Code of the Russian Federation*, the industrial land control should be implemented by the owner of a land plot, land user, land owner, landholder in the process of business activities performed on a land plot. An entity using a land plot shall provide information on industrial land control organization to a designated state land control authority according to the procedure established by a federal executive body authorized by the Government of the Russian Federation.

In order to prevent land pollution, in compliance with the requirements of the IFC *Environment Protection, Health, and Safety Manual*, it is necessary to take measures to prevent discharges and leaks of hazardous substances, penetration of hazardous waste and petroleum into the natural environment. When land pollution occurs at any stage of project implementation, it is necessary to identify and eliminate the cause of uncontrolled discharge to prevent further discharges and associated adverse effects.

This Plan is developed in accordance with IFC PS4, especially considering the requirement outlined in Paragraph 8: Company is required, where possible and reasonable, to determine risks and potential impacts to the priority ecosystem services that can be aggravated due to climate change. For example, the land use change or loss of natural buffer zones, such as wetlands, mangroves, and mountain forests, which mitigate the impacts from natural hazards – such as flooding, landslide, fire, can increase the vulnerability and related safety risks and impacts to local community.

3 Main types of impact on the geological environment, soils, and local topography from the North-European gas pipeline linear section from CS “Volkhovskaya” to the Portovaya Bay

3.1 Impact on geological environment and topography from linear section of the North-European gas pipeline

The following impact on the geological environment may occur in the process of operation of the North-European gas-pipeline linear section from CS “Volkhovskaya” to the Portovaya Bay:

- static impact from the group of buildings and facilities;
- dynamic impact from operating machines and moving traffic;
- change of humidity mode of the soil masses due to disturbance of surface and subsurface water flows.

The following dangerous geological processes (DGP) may occur in the period of the MGPL linear section operation:

- local and areal water flooding and bog formation;
- erosion processes;
- suffusion;
- karst processes.

Water flooding processes may occur under the following conditions:

- disturbances of water drainage and water-way units operation ;
- low permeability of soils used for backfilling of trenches as compared to surrounding grounds;
- soil compaction at the base of access roads, etc.

Stripping of top soil in the process of land levelling and construction and installation work will contribute to the development of *erosion*. This process may develop within slopes composed of rock with insignificant resistance to erosion, with a slope ratio of more than 5-7 °C.

Potentially dangerous areas where linear and plain erosion processes may develop are areas with surface bedding of mostly sandy deposits.

Bed erosion (bank and bottom erosion) processes may only occur in the areas where the pipeline route crosses permanent streams (river valleys and channels). The process reaches its peak intensity in flood periods which occur in spring, summer, and autumn seasons of the year. When the vegetation cover is disturbed, the resistance of soils to erosion substantially decreases and the erosion rate and volumes may essentially increase.

Wind erosion processes take place under the conditions of combination of strong surface wind, dry ground surface, and absence of topsoil. The processes may be intensified in case of operation of pipeline service roads arranged in the area of incoherent sands development.

Suffusion may occur practically everywhere in the areas of suffusion nonresistant rocks in the boundaries of areas with disturbed natural topography (arrangement of embankments, artificial depressions between separate pipeline strings in the right-of-way) and high levels of groundwater. Suffusion holes may form in the snowmelt and heavy precipitation period as a result of infiltration of surface runoff. Intensified concentrated surface run-off into the suffusion holes is possible, which results in generation of small ravines.

Intensification of *karst processes* may occur in the period of operating activity in a karsting rocks area and may be caused both by subsurface water flows afflux and by possible change in the subsurface water chemical composition.

3.2 CS "Portovaya" impact on the geological environment and topography

CS "Portovaya" operation may result in a change of the geological environment and conduce initiation of DGP in the facility location area.

Sources of impact on the geological environment and topography in the period of CS "Portovaya" operation may be buildings, facilities, and roads. The main results of such impacts are as follows:

- damming of surface run-off and water flooding of land;
- change of subsurface water stock and wastewater discharge;
- change in soil characteristics and landscape disturbance as a consequence.

Water flooding and bogging-up of the territory may occur as a result of water table rise in the first place and also due to a change in the surface run-off conditions. Water flooding is mainly possible due to the fact that the subsurface water of the area of "Portovaya" CS location is characterized as combined natural and technogenic water: the phreatic aquifer is located close to the surface and comes out to the surface in some places.

The following consequences of the water flooding process also constitute a danger:

- water breakthrough to the bottom soils resulting in deterioration of strength and deformation properties of soils and activation (or occurrence) of DGP (bogging-up, suffusion, karst, blowup);
- change in chemical composition of subsurface water and soils;
- flooding of ground and underground level premises, facilities, and utilities;
- corrosion of metal and concrete of underground structures and facilities;
- deterioration of sanitary and hygienic conditions in the area.

3.3 Impact of linear section of the North-European gas-pipeline on lands and soils

Operation of linear section of the North-European gas-pipeline can cause various disturbances of land, which potentially can be as follows:

- losses of land resources used for allocation of permanent aboveground facilities;
- damage to forest vegetation on forest edges as a result of changed hydrogeological conditions;
- changes in chemical-biological and physical and mechanical properties of the ground and subsoil.

Consequences of such disturbances will be the deterioration of fertility properties of the topsoil both on agricultural land (farm fields, hayfields) and on forest land; losses of cropland and hayland products; partial change of vegetation communities on cropland and hayland.

The main sources of impact on topsoil during operation of the North-European gas pipeline linear section are as follows:

- allocation of gas pipeline facilities;
- arrangement of side roadways ;
- motor transport and special vehicles which may be used on the side roadways .

Areas of peatlands reclaimed in the process of construction works may constitute a potential danger because of the increased fire risk in the surrounding areas. Such situation may develop if the pipeline is laid in (structurally) upper parts of bogs that are areas of subsurface water recharge.

Construction of line side roadways supposes utilization of sand and gravel mix for road base forming. As a result, partial “sealing” of soil surface is possible which results in reduction of their biological productivity, and degradation. However, generally the line roads will occupy small areas; therefore the forecasted magnitude of such impact is insignificant.

In addition, construction of side roadways is associated with the reduction of natural soil areas and the process of overconsolidation of the upper root layer, sometimes the turf bed. When soil (especially the root layer) is overconsolidated, many plant species are killed, the grass sod is destroyed, the surface run-off changes, and erosion processes develop. Sections of line roads located on relatively steep slopes (often valley slopes) where forms of linear erosion may develop (large scours and ravines) give the greatest cause for concern.

Apart from the above mentioned mechanical impact, geochemical impact on soils and ground may also occur in the process of vehicles and machinery operation, which will consist in chemical contamination of such soil and ground.

In case of violation of motor transport operating procedures, POL and fuel combustion products (petroleum products and heavy metals in the first place) may spill on the soil surface.

Contamination of topsoil may be especially dangerous in case of emergency situations related to POL spills. The most hazardous areas with respect to pollutant dissipation are the lands adjacent to the pipeline route, and also parts of floodplains near terraces which are zones of accumulation of substances, including pollutants. Spread of pollution depending on the pollution intensity may result in deterioration of the main properties of soil which are responsible for the level of the soil fertility, i.e. in partial or complete degradation of contaminated soils.

In addition, contaminated soil may serve as a secondary source of spread of pollutants in case of changes in their physical and chemical properties, and oversaturation of the soil adsorption complex. In case of floodplain soils, pollutants may enter the inland fresh water system relatively quickly.

Generally degradation and contamination of soil and ground in the period of the gas-pipeline operation seem insignificant subject to compliance with the motor transport and special vehicles operating procedures and also the requirements for allocation of areas for storage of POL, waste, and other potential sources of pollution along the pipeline route.

Contamination of topsoil with corrosion and scale products and also with soil, water, and various items which accidentally get into the gas-pipeline in the process of construction, may occur in the vicinity of a pig receiver when works on cleaning of the inner surface of the gas pipeline are performed. However, such contamination is excluded in case of correctly organized process of gas-pipeline inner surface cleaning.

3.4 Impact of CS "Portovaya" on soil and lands

The site of CS "Portovaya" is located on lands of no agricultural value. To prevent allocation of significant areas for construction of the facility, the general plan has been developed with a provision for the maximum built-up density and minimum length of utility networks.

Boundaries of the land occupied for long-term use (for the whole period of operation) as the site of CS "Portovaya" are the lines located at the same distance 1 m from the toe of the site fill. Boundaries of the land occupied for short-term use for construction of the second phase of CS are the lines of firebreaks (75 m from the fencing of CS site).

Thus there will be no impact causing contamination of soil throughout the period of CS "Portovaya" operation.

Topsoil contamination is only possible in the areas of storage of hazardous substances and waste.

4 Management and monitoring

4.1 Management of impact on geological environment, soil, and topography

Actions on mitigation of negative impacts from facilities on the geological environment, soil, and topography should be undertaken in the process of operation of the North-European gas pipelines linear section from CS "Volkhovskaya" to the Portovaya Bay.

The geological environment, soil and topography impact management plan is provided in table 11.1.

Table 11.1.

Plan of the management of impact on geological environment, soil, and topography in the process of operation of North-European gas pipeline linear section from CS “Volkhovskaya” to the Portovaya Bay

Type of potential impact	Mitigation actions	Action frequency	Action item lead
Erosion processes	Arrangement of erosion control structures on the slopes of the gas-pipeline route (bulkheads, banks)	Permanent	Portovoye branch
	Arrangement of forced surface water run-offs; prevention of possible leaks of surface run-offs from the Portovaya CS site		
	Bank stabilization and fixing of slopes with bushes and sprigging grass in order to create a greensward. Infilling of ditches and trenches with suitable material in those areas that have been negatively affected as a result of Project construction. Monitoring of these areas. These works are performed by the Company within ROW of main gas pipeline. Outside ROW these works are performed by Land owner.		
	Laying of culverts in topographic lows		
Chemical contamination of soil	Reclamation of disturbed lands	As necessary	Land plot owner
	Compliance with industrial and household waste and hazardous materials handling rules, prevention of littering of MGPL right-of-way and Portovaya CS site with hazardous waste and POL	Permanent	Portovoye branch
	Compliance with motor transport operating procedure		
Disturbance of vegetation cover and topsoil	Vegetation cutting progressively as the areas near the facilities are overgrown, without damaging the roots	As necessary	Portovoye branch
	Implementation of melioration measures to protect the topsoil against loss or degradation in the area of facilities routing		
	Compliance with industrial and household waste and hazardous materials handling rules		

Type of potential impact	Mitigation actions	Action frequency	Action item lead
	Compliance with fire safety rules		
	Timely performance of random sanitation and improvement felling along the gas pipeline, cleaning of the area from felling residue		
	Compliance with motor transport operating procedure		
	Reclamation of disturbed lands	As necessary	Land plot owner
Disturbance of geological environment and topography	Arrangement of forced surface water run-offs; prevention of possible leaks of surface run-offs from the area of Portovaya CS	Permanent	Portovoye branch
	Maintenance of Portovaya CS sewage systems in good working order		

4.2 Monitoring of impact from North-European gas pipeline from CS “Volkhovskaya” to the Portovaya Bay on the geological environment, topography , and soils

Monitoring of impact from North-European gas pipeline from CS “Volkhovskaya” to the Portovaya Bay on the geological environment, topography and soils, shall be performed in order to comply with the requirements of the Land Code of the Russian Federation regarding the necessity of land control, which includes DGP control.

Control is performed on the basis of remote probing data interpretation and control routes. The studies consist of three phases:

- 1) Selection and processing of remote probing data.
- 2) Route surveys of areas selected for monitoring on the basis of interpretation data.
- 3) Study of remote probing data for the whole pipeline route to control DPG and identify new areas of DPG manifestation.

Route surveys of areas selected for monitoring on the basis of interpretation data include:

- hydrographic network check with photographic recording of areas prone to lateral corrosion;
- identification of ravine formation signs in meadow areas;
- establishing sustainable interpretation signs for landscape units and various DPG types manifestation signs.

The main parameters of landscape condition control are as follows:

- density of erosional pattern, extent of reflection thereof in the remote sensing data;
- areas of meadowed spaces, especially those which occurred as a result of anthropogenic processes, and analysis of possible development of erosional pattern of temporary streams in such spaces;
- areas of spaces overgrown with shrubbery vegetation;
- areas of spaces overgrown with trees and tree and shrubbery vegetation and change in their areas.

DGP control involves observation of erosive action of streams and bogging-up of surface due to excessive water.

Special attention on CS "Portovaya" site is paid to interpretation of signs of endogenous geodynamic processes, such as the signs of activation of geodynamic motions along the linear

features of topography , especially in the industrial development area, the relation of those signs with possible water sources, a possibility of manifestation of gravitational processes in the pipeline passage area.

Review of the whole pipeline route remote sensing data for DGP control and identification of new areas of DGP manifestation involves performance of observation route surveys in CS areas to confirm the landscape change signs identified on space images, evaluation of the nature of such changes, and geographic connection by way of obtaining quantitative and visual information: photography of DGP manifestation areas, measurement of such changes (landslide plane slope angle, landslide volume, erosion zone width, etc.).

1:50 000 scale and larger scale topographic maps and global positioning systems GPS are used in the process of observation route surveys.

Following the results of observation route surveys a 1:25 000 – 1:50 000 scale landscape map is prepared, where vegetation and topography elements and areas of possible geodynamics manifestation are shown. In addition, DGP area and nature measurement tables are prepared: tables of interpretation signs-markers for monitoring of DGP development dynamics mainly by the remote sensing method.

A scheme of DGP manifestation is prepared, interpretation signs are specified, and a forecast of possible DGP manifestations in the gas-pipeline area is given following the results of yearlong observations.

Monitoring of CS "Portovaya" operation impact on the condition of soil is performed in the framework of observations of the water protection zone of the Portoviy Creek – CS "Portovaya" treated wastewater intake basin.

Control is performed in compliance with the Program of regular observations of a water body and its water protection zone approved by the Neva-Ladoga Basin Water Directorate.

The frequency of control, the test parameters, and the sampling points are described in Appendix 13 (Industrial Environmental Monitoring) to this Manual.

4.3 Disturbed land reclamation

According to STO Gazprom 2-1.12-386-2009 "Procedure to design the land reclamation project at construction of gas distribution facilities" the main goals of reclamation of lands disturbed by construction of gas distribution facilities are: conservation of soil fertility at a level

existing before construction was started, and land restoration, elimination of development or activation of hazardous exogenetic processes (erosion, karst, landslide, suffusion and etc.)

The land reclamation is a complex of works intended to restore the productivity and economic value of disturbed land, as well as improvement of environmental conditions for the benefit of community.

The disturbed lands of all categories are subject for reclamation, as well as adjacent land plots, which completely or partially lost their productivity as a result of negative impact from disturbed lands, including: ROW of main gas pipeline, cable lines, drainage channels; construction sites of onsite facilities; land plots disturbed by construction of temporary objects (roads, support sites to place construction materials and waste)

Reclamation of disturbed lands is performed in compliance with the requirements of GOST 17.5.1.02-85 Classification of disturbed lands to be restored and GOST 17.5.3.04-83 Reclamation general requirements.

According to the Land Code of the Russian Federation the effective measures on reclamation of disturbed and contaminated lands of all categories should be provided at design stage and construction of gas transportation facilities. The reclamation activity is defined by land category to which the land plot allocated for construction belongs.

According to main provisions on land reclamation, removal, conservation and rational use of top soil (established by decree of Ministry of natural resources # 525, RF Land committee № 67 dated 22.12.1995) the land reclamation for agricultural needs requiring restoration of soil fertility is performed in two stages: technical and biological.

Technical stage includes levelling, shaping slopes, removal and laying of top soil, arrangement of hydro-technical and ameliorative structures, and other activities creating the necessary conditions for further use of reinstated land for its designated purpose, or for further land fertility restoration activities (biological stage).

Biological stage includes a complex of agricultural and revegetation activities to restore the agrophysical, agrochemical and other features of soil, deteriorated as a result of construction works.

Biological reclamation is performed to achieve the following goals: restore the fertility of disturbed lands; reinforce the disturbed land plots to protect soil from water and wind erosion; restore the economic, sanitary-hygienic and aesthetic value of disturbed landscape.

The list of works at stage of biological reclamation of land disturbed by construction, includes works necessary and sufficient for land restoration to the level existing before construction activities.

Top soil removed at construction of line structures is used without its stocking and storing for reclamation of land disturbed by construction, and for adjacent low productive agricultural areas.

Following the results of the survey, an area of agricultural land was found along 27.1 km of the NEG pipeline route where the fertile topsoil shall be removed for storage and further use for reclamation purposes. It mainly consists of sod-podzolic soils with loamy particle-size distribution and alluvial soils.

The technical phase of reclamation was implemented by the construction contractor upon completion of NEG construction.

The biological reclamation was performed by land users (land plot owners) within the boundaries of the disturbed agricultural land upon completion of the technical phase of reclamation.

During Project operation period the land reclamation activities will be performed when needed, by Company own forces within main gas pipeline ROW. Outside ROW all works should be performed by land owner with taking into consideration the requirements of STO Gazprom 2-3.5-454-2010 "Main gas pipeline operation rules" and "Main gas pipeline security rules" (established by decree of Federal Mining and Industrial Inspectorate of Russia # 9 dated 24.04.92)

The following works may be included in the complex capital repairs of main gas pipeline routes:

- prevention of gullies, washaways, karsts, and soil subsidence; restoration of dams;
- removal of trees and shrubs;
- fixation of shifting soils.

According to Main gas pipeline security rules the field and agricultural works within main gas pipeline protective zone are performed by users (owners) of land plots at notice to the Company about start of such works.

On irrigated lands, located within protective zones of pipelines, the works associated with temporary land flooding are performed by agreement between land owner and Company.

Appendix 32-03-06-01-12

Hazardous materials management plan

1 Purpose

A purpose of Hazardous Materials Management Plan is to develop measures to manage risks related to handling of hazardous materials used in the process of Project facilities operation.

Hazardous materials management plan should be considered in combination with other Company Plans:

- Atmospheric emission Management Plan.
- Water resources Management Plan.
- Waste Management Plan.
- Occupational Safety Plan
- Health care organization, community safety and security Management Plan.

2 Statutory and other requirements

The Hazardous Materials Management Plan has been developed in compliance with IFC PS3 "Rational Use of Resources and Environmental Pollution Prevention", IFC PS 2 "Labor and Working Conditions", IFC PS4 "Community Health, Safety, and Security".

A purpose of applying the above standards to the Project is to prevent or minimize adverse impacts of hazardous materials on the human health and environment.

Throughout the lifecycle of Project, the Company takes into consideration the external conditions and prevents contaminations, as well as manages the processes and methods, which help to avoid or, where prevention is impracticable, minimize the adverse impacts on human health and environment (on condition of technical and financial feasibility). The principles and methods applicable throughout the lifecycle of the Project are developed with taking into consideration the hazardous and risk factors.

In order to prevent potential adverse impacts from Project on the original environment status, the Company shall consider the relevant factors, including:

- existing environmental conditions;
- capability of environmental components for self-regeneration;
- existing and planned land use;
- proximity of Project to areas important for biodiversity preservation.

In accordance with requirements of above mentioned IFC PS, the Company is required to withdraw from using hazardous materials and, if not impossible, minimize their use, as well as control distribution of hazardous materials in the environment. It is necessary to implement hazardous material storage and use assessment within Project implementation framework.

As per IFC PS4 "Community Health, Safety, and Security" the Company is required to avoid or minimize the potential community exposure to impact from hazardous materials and substances that may be released in the course of Project implementation. Where there is a potential for the public (including workers and their families) to be exposed to hazards, particularly those that may be life-threatening, the Company will exercise special care to avoid or minimize their exposure by modifying, substituting, or eliminating materials causing the potential hazard. In case the hazardous materials are part of existing Project infrastructure or its components, the Company is required to exercise special care at decommissioning of facility to avoid risk of adverse impact on the community. The Company will exercise commercially reasonable efforts to control the safety of deliveries of hazardous materials, as well as transportation and disposal of hazardous wastes.

3 Hazardous materials management

There are hazardous materials used in the process of operation of CS "Portovaya" and North-European gas pipeline linear section from CS "Volkhovskaya" to the Portovaya Bay. Main hazardous materials and safety measures when handling these materials, are shown in Table 12.1.

The activities to prevent a potential negative impact from hazardous materials on environment, personnel and local community should be performed at operation of CS "Portovaya" and NEGP linear section from CS "Volkhovskaya" to the Portovaya Bay.

The execution of actions listed in Table 12.1 allowing to mitigate and prevent, where possible, a negative impact from hazardous materials to environment, personnel and local community.

Since local population of Bolshoi Bor settlement located in 4 km from CS "Portovaya" has no access to the site of CS "Potovaya", and probability of Company performing works using hazardous materials in Bolshoi Bor is very low, the hazardous materials impact on local community is unlikely.

In case the works using hazardous materials are performed in Bolshoi Bor, the following safety measures should be undertaken:

- Inform local community in advance about time and area of work;
- Provide local community with PPEs;

- Limit access of local community to the area of work;
- Works should be performed in strict compliance with OS&IS, and work procedure;
- Works should be performed in favorable weather conditions.

Table 12.1.

List of Hazardous materials generated at Project facilities and required safety measures

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
Natural gas	4	300 mg/m ³ 1% vol.	<p>Natural gas is colorless, much lighter than air, low-toxic, if it contains no harmful admixtures above the admissible rates.</p> <p>If natural gas has been treated, its properties differ little from those of methane.</p> <p>Heavy hydrocarbon admixtures change the properties of natural gas: increase its density; reduce the ignition temperature (low ignition concentration limit, LIDL) and, consequently, the admissible volumetric gas content in the air of a working area; in case of a high content thereof in gas, these add a gasoline odor; reduce the minimal ignition energy. Relative air density 0.55, density 0.717 kg/m³. MAC in terms of C₁-. Action on the body is asphyxiating. Presence of people in the atmosphere</p>	<ol style="list-style-type: none"> 1. In case the methane MAC in a working area is exceeded, an oxygen breathing protective mask shall be used. 2. In potential gas content areas, it is prohibited to use an open fire, perform sparking operations, and heat materials to the self-ignition temperature of combustible materials, when there is no issued job order for hot operations. 3. In case of asphyxia due to natural gas, the victim shall be removed immediately from the gassy area; unbutton the clothes restraining breathing, provide a fresh air inflow, lay him or her down, lift slightly the legs, cover him or her to keep warm, give liquid ammonia to be snuffed, and call a doctor. 	<ul style="list-style-type: none"> - Regular measurement of the gas content. When gas content in air of the CS premises 0.5% vol. methane, the emergency exhaust ventilation, emergency light and sound alarm systems will activate automatically. - When gas content in air of the rooms achieves 1% vol. methane, operation of the faulty equipment shall be stopped. - Maintain ventilation systems in proper condition - Work out an emergency procedure. - Make employees aware of this procedure. - Perform OH&IS briefings. - Perform verification of compliance with OH&IS rules

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
Gas condensate*	4	300 mg/m ³ 1% vol.	<p>with a methane content to 20% causes anoxia, and with a methane content of 20% and more results in asphyxia due to lack of oxygen.</p> <p>Air ignition concentration limits 5-15% (vol.), ignition temperature 645°C.</p> <p>Minimal ignition energy 0.15 mJ.</p>	<ol style="list-style-type: none"> 1. When handling gas condensate, PPE shall be used such as special clothes, special footwear, gloves, and protective goggles. 2. Gas condensate contacting with skin shall be washed off with warm soapy water, in case of contact with mucous coats, wash off with clear water and then call a doctor. 3. In case of a gas condensate spill onto the ground, steps shall be taken in order to prevent its ignition and the area shall be cleaned. Any contact with the spilled material is prohibited. 4. A spill area shall be localized with sand, embanked, and any contact of the material with surface water shall not be allowed. Cut off the contaminated surface soil bed, collect 	<ol style="list-style-type: none"> 1. Provide secondary containment system (leakproof storage reservoir placed on drip pan). 2. Provide sufficient spill response material in storage areas 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Ensure that condensate storage areas have limited access. 5. Perform OH&IS briefings. 6. Perform inspections of condensate storage areas 7. Perform verification of compliance with OH&IS rules
			<p>Gas condensate depositing inside a gas pipeline increases the friction of piping and, in case of drainage or leakage as well as repair, increases a fire and gas explosion danger.</p> <p>Unstable gas condensate contains propane-butane, and even ethane and pentane, which governs its high vapor pressure. Stable gas condensates consist primarily of heavy hydrocarbons (pentane and higher boiling hydrocarbons C5) and 2 – 3% of lower boiling ones (propane and butane).</p> <p>Unstable and partly</p>		

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
			<p>stabilized gas condensate, due to its heavy hydrocarbon vapor emissions into the atmosphere, increases a fire and explosion danger.</p> <p>A high gas condensate explosion danger features low LIDL values of its vapors in air, stability against heavy vapor dispersion in the atmosphere, and quite a high flame dispersion rate in air-vapor mixtures.</p> <p>Stable gas condensate meeting the specifications can be stored in common tanks and transported in tank railcars and trucks designed for light petroleum products.</p> <p>Density of stable gas condensates is 0.70 – 0.81 g/cm³.</p> <p>In terms of hazard, stable gas condensates are similar to light petroleum products such as gasoline and kerosene, while differing from them in broader vaporization, ignition</p>	<p>and remove for disposal purposes, while observing fire safety measures. The cut-off areas shall be backfilled with a fresh soil bed. The soil contaminated with condensate shall be treated by a neutralizer.</p> <p>5. In case of asphyxiation due to gas condensate vapors, the victim shall be removed immediately from the gassy area; unbutton the clothes restraining breathing, provide a fresh air inflow, lay him or her down, lift slightly the legs, cover him or her to keep warm, give liquid ammonia to be snuffed, and call a doctor.</p>	

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
			<p>temperature ranges, and other characteristics.</p> <p>The gas condensate vapor ignition limits and ignition temperatures are much lower than those of natural gas; these become lower as the gas condensate density increases. Heavy hydrocarbon vapors emitted in the course of stabilization and further gas condensate evaporation are much heavier than air. Therefore, they drift over the ground surface under a windless weather, accumulate in lowlands, and disperse slowly, while producing explosive vapor and air mixture concentrations with a very low LIDL value across a vast area. The LIDL of stable gas condensate vapors is generally 1.1 – 1.3% (vol.).</p> <p>The adverse health effect of gas condensate and liquefied gas vapors is quite low.</p> <p>Due to a high density</p>		

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
			<p>against air, those can accumulate in lowlands and, while decreasing the oxygen content in air, produce a narcotic action, cause a headache, nausea, convulsion, weakness, and faintness.</p> <p>Gas condensates can produce a harmful impact on the human skin, while causing sicknesses (skin dryness, skin crevice, and sometimes dermatitis, eczema, etc.). The contact with mucous coats is especially dangerous.</p> <p>Leakage of unstable gas condensate results in heavy local cooling of the jet as well as contacting metals and bodies. Contacts of unstable gas condensate with human body skin can cause its freezing injury.</p> <p>If gas condensate also contains some moisture, carbon acid, and sulfur compounds, it causes increased corrosion inside a gas pipeline, especially in lowlands along the route.</p>		

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
Carbonic acid gas (carbon dioxide)	4	MAC has not been specified, assessment of the concentration can be based on the standard coal and lignite wax mine rates specified within the limits of 0.5% (vol.) or 9.2g/m ³	<p>Even high quantities of carbonic acid gas have no effect on human health in any way. However, it prevents oxygen absorption at a content of 5% to 15% vol. in the atmosphere. At such a concentration, asphyxia begins and even death occurs.</p> <p>Carbon dioxide – CO₂, colorless gas (under normal conditions), odorless, with a slightly acidic taste. Density under normal conditions is 1.97 kg/m³. Under atmospheric pressure, carbon dioxide does not exist in a liquid state and transforms directly from a solid to gaseous state. Solid carbon dioxide is referred to as dry ice.</p> <p>Chemical properties: CO₂ is a low-active compound. In terms of chemical properties, carbon dioxide is classified as acidic oxide. When dissolved in water, it produces carbonic acid that</p>	<ol style="list-style-type: none"> 1. When handling liquid carbon dioxide, protective goggles and gloves shall be used. 2. When inspecting a used vessel designed for storage or transportation of liquid carbon dioxide, the vessel shall be warmed up to the ambient temperature, ventilated or air purged. The work shall be carried out by a person using an airline respirator. 3. Any work without a respirator shall be only permitted after the volumetric carbon dioxide percentage inside the equipment has decreased below 0.5%. 4. The premises designed for production of carbon dioxide shall be equipped with a general suction and exhaust ventilation and emergency ventilation system. 5. To measure and record the carbon dioxide concentration in the air of premises, either stationary automatic or portable gas analyzers shall be used. 6. In case of asphyxiation due to carbonic acid gas, the victim shall be removed immediately from the gassy area; unbutton the clothes restraining breathing, provide a fresh air inflow, lay him or her down, lift slightly the legs, cover him or her to keep warm, 	<ol style="list-style-type: none"> 1. Regular measurement of the gas content in work places. 2. Maintain ventilation systems in proper condition 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Perform OH&IS briefings. 5. Perform verification of compliance with OH&IS rules

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
			<p>paints red a litmus paper.</p> <p>Physical properties:</p> <p>Under normal temperature and pressure, carbon dioxide is colorless gas featuring a slightly acidic taste and odor. It is 50% heavier than air, so it can be poured from one to another vessel. CO₂ is a product of most combustion processes and, in rather high quantities, can extinguish flames through displacement of oxygen from air. When a concentration of CO₂ increases in a poorly ventilated room, the oxygen content in air decreases so that an individual can asphyxiate. CO₂ dissolves in many liquids; the solubility depends on the liquid properties, CO₂ vapor temperatures and pressures. CO₂ dissolves perfectly in organic solvents, for example, in alcohol, acetone, and benzene.</p> <p>Upon a pressure increase</p>	<p>give liquid ammonia to be snuffed, and call a doctor.</p>	

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
			<p>and cooling, carbon dioxide liquefies easily and transforms into a liquid state at temperatures of +31 to -57°C (depending on the pressure). Below -57°C, it transforms into a solid state (dry ice). The pressure required for liquefaction depends on the temperature: at +21°C, it is 60 atm, and at -18°C it is as low as 20 atm. Liquid CO₂ is stored in airtight vessels under an appropriate pressure. When leaking into atmosphere, it transforms partly into gas, and some quantity converts into "carbon snow", while its temperature drops down to -84°C.</p> <p>While absorbing heat from the environment, dry ice converts into a gaseous state, avoiding a liquid phase, i.e. sublimates. To reduce the sublimation losses, it is stored and transported in airtight containers that are strong enough to withstand a pressure increase under a</p>		

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
Ethylene glycol, antifreeze solution*	3	10 mg/m ³	<p>temperature growth.</p> <p>Liquid carbon dioxide, upon a decrease in pressure down to the atmospheric one, converts into gas and snow at a temperature of 78.5°C below zero, which cause a skin freezing injury and affection of eye mucosa.</p> <p>Ethylene glycol is a combustible material. Vapor flash point 120°C. Self-ignition temperature 380°C. Vapor ignition temperature limits in air, °C: low – 112, high – 124. Vapor ignition limits in air from low to high: 3.8-6.4% (vol.).</p> <p>Ethylene glycol is toxic. A fatal dose in case of single oral consumption is 100 – 300 ml ethylene glycol (1.5 – 5 ml per 1 kg body mass). It offers quite low volatility at a normal temperature, while vapors feature not so high toxicity and pose a danger only in case of chronic inhalation. A certain danger is caused</p>	<p>1. When handling ethylene glycol, a film cloth apron, rubber gloves and high boots shall be used as well as a gas mask in case of increased concentrations.</p> <p>2. An antidote in case of intoxication due to ethylene glycol is ethanol and 4-methylpyrazol.</p> <p>3. To eliminate ethylene glycol spills, the material shall be pumped from the lowland, while observing safety measures. A spill area shall be embanked, while no ingress of the material into surface water shall be allowed, then it shall be localized with sand. Cut off the contaminated surface bed, collect into a separate vessel. The cut-off areas shall be backfilled with fresh soil. Wash the rolling stock surfaces with water, the areas shall be washed with a low-concentrated alkaline solution (lime milk, caustic</p>	<ol style="list-style-type: none"> 1. Provide secondary containment system (leakproof storage reservoir placed on drip pan). 2. Provide sufficient spill response material in storage areas 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Ensure that storage areas have limited access. 5. Perform OH&IS briefings for persons in charge of storage and handling glycol. 6. Perform inspections of storage areas 7. Perform verification of compliance with OH&IS rules

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
Diethylene glycol*	3	10 mg/m ³	<p>by mists, although a danger relating to inhalation of the same is indicated by irritation and cough.</p> <p>Ethylene glycol is a basic material for antifreeze agents. Besides a freezing temperature drop, ethylene glycol results in an cooling liquid boiling temperature increase.</p> <p>A colorless or yellowish transparent liquid that is combustible; self-ignition temperature 343°C, ignition temperature 132°C; it produces no toxic substance upon ignition; it is toxic: when entering a human body, it causes acute intoxication, affects kidneys and liver.</p>	<p>ash solution). The area surface shall be burnt out when the material poses a threat of ingress into ground water, the soil shall be dug over again.</p> <p>4. When ingested, flush the stomach with a salt or aquatic charcoal solution, keep the victim immovable. Call a doctor.</p>	<ol style="list-style-type: none"> 1. Provide secondary containment system (leakproof storage reservoir placed on drip pan). 2. Provide sufficient spill response material in storage areas 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Ensure that Diethylene glycol storage areas have limited access. 5. Perform OH&IS briefings for persons in charge of storage and handling diethylene glycol. 6. Perform inspections of diethylene glycol storage areas 7. Perform verification of compliance with OH&IS rules
Diesel fuel	4	300 mg/m ³	A liquid product used as a fuel in internal combustion	<ol style="list-style-type: none"> 1. In case of fire, a gas mask type KIP-8 or ASV-2 shall be used; extinguishing shall be with water, water steam, foam or carbonic acid; 2. The spilled product shall be filled up with sand or wooden chips. A destruction method shall be burning through addition to combustible mixtures. As the properties are close to those of ethylene glycol, then safety measures shall be the same as those when handling ethylene glycol. 	<ol style="list-style-type: none"> 1. Provide secondary containment system (leakproof storage reservoir placed on drip

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
			<p>engines as well as gas diesel engines. This term is generally understood as a fuel produced from crude oil kerosene-gas cuts of straight distillation. A basic indicator of diesel fuel is a cetane ratio. A cetane ratio describes the fuel capacity to ignite in a combustion chamber and equals to the volumetric cetane content in a mixture with α-methyl naphthalene, which under standard conditions (under ASTM D613) offers an equal combustibility as compared with the examined fuel. The flash point determined under ASTM D93 for diesel fuels shall be less than or equal to 70°C. An explosive concentration of its vapors and mixture with air is 2-3% (vol.).</p> <p>The fuel irritates human mucous coat and skin, while causing an injury of the same and origination of skin diseases. Permanent contacts with the fuel can result in acute</p>	<p>be applied: water spray, foam; in case of smothering, carbon dioxide gas, SZHB and "3,5" compounds as well as superheated steam.</p> <p>2. In case of a fuel spill, it shall be collected into a separate container, and the spill area shall be rubbed with a dry cloth; in case of a spill at an exposed site, the spill area shall be filled up with sand, which shall be then removed and decontaminated.</p> <p>3. Fuel handling rooms shall be equipped with a mechanical suction and exhaust ventilation system. The intense fuel vapor emission areas shall be equipped with local exhausts.</p> <p>4. Fuel storage rooms shall not allow for storage of acids, oxygen cylinders, and other oxidizers.</p> <p>5. Fuel sampling, analysis, and handling in the course of transportation and production operations, personal protection equipment shall be applied under the standard regulations.</p> <p>6. In the areas of fuel vapor concentrations exceeding the maximum admissible concentration, PFMG type respirators with a BKF box as well as PSH-1 type airline respirators or similar ones shall be applied.</p>	<p>pan).</p> <ol style="list-style-type: none"> 2. Provide sufficient spill response material in storage areas 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Ensure that diesel fuel storage areas have limited access. 5. Perform OH&IS briefings for persons in charge of storage and handling diesel fuel. 6. Perform inspections of diesel fuel storage areas 7. Perform verification of compliance with OH&IS rules

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
Turbine oil	3 (oil mist) 4 (hydrocarbon vapors)	5 mg/m ³ (oil mist) 300 mg/m ³ (hydrocarbon vapors)	inflammations and chronic eczemas. Doped turbine oils are combustible, medium-flammable fluids offering a flash point of 180-220°C. Turbine oil features good stability against oxidation. Turbine oil produces no adverse impact on health when handled and used properly. Long-term contacts can result in chronic intoxication and skin diseases.	7. In case the fuel contacts with exposed body areas, it shall be removed and the skin shall be rinsed abundantly with warm soapy water; in case it contacts with eye mucosa, the eyes shall be rinsed abundantly with warm water. 1. In case of an oil spill, this shall be collected into a separate container, and the spill area shall be rubbed with a dry cloth; in case of a spill at an exposed site, the spill area shall be filled up with sand, which shall be then removed and decontaminated. 2. An oil handling room shall be equipped with a suction and exhaust ventilation system. 3. In case the fuel contacts with skin and eye mucosa, the skin shall be rinsed abundantly with warm soapy water, and the eye mucosa with warm water. 4. When handling doped hydrocarbon turbine oil, PPE shall be applied such as special clothes, special footwear, gloves, and protective goggles. 5. In case of oil ignition, the following extinguishing means shall be used: foam; in case of smothering – carbon dioxide gas, steam.	1. Provide secondary containment system (leakproof storage reservoir placed on drip pan). 2. Provide sufficient spill response material in storage areas 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Ensure that oil storage areas have limited access. 5. Perform OH&IS briefings for persons in charge of storage and handling oil. 6. Perform inspections of oil storage areas 7. Perform verification of compliance with OH&IS rules
Lubrication	3 (oil)	5 mg/m ³	Substances designed as a	1. When handling, PPE shall be used	1. Provide secondary containment system

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
fluids for gas fittings, engines, etc. (Mobil Extra 2T, SAG, Valvoline, TP-22S, etc.)	mist) 4 (hydrocarbon vapors)	(oil mist) 300 mg/m ³ (hydrocarbon vapors)	lubricant against wear and tear of moving equipment parts. Combustible medium-flammable fluids. In case of contact with eyes and skin, this can result in irritation. In case of permanent contact with skin, a result is dermatitis.	such as special clothes, special footwear, gloves, and protective goggles. 2. When the oil contacts with skin and eye mucosa, the skin shall be rinsed abundantly with warm soapy water, and the eye mucosa with warm water. 3. When ingested, flush the stomach and call a doctor. 4. In case of ignition, the following extinguishing means shall be used: water spray, foam; in case of smothering – carbon dioxide gas.	(leakproof storage reservoir placed on drip pan). 2. Provide sufficient spill response material in storage areas 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Ensure that storage areas have limited access. 5. Perform OH&IS briefings for persons in charge of storage and handling lubrication fluid. 6. Perform inspections of lubrication fluid storage areas 7. Perform verification of compliance with OH&IS rules
Corrosion Inhibitor Tri-Akt	2 (Cyclohexylamine) (vapors) 2 (2-Aminoethanol) (vapors+ spray)	1 mg/m ³ 0.5 mg/m ³	A light-yellow liquid (alkaline) with an aggressive odor. It is used on a GTPU ZHTN system to prevent corrosion. Flash point 57° C, pH 12.8. Impacts on a human body: it causes burns. In case of contacts with skin, it can result in heavy irritation and an injury of tissues, which heaviness depends on the impact duration and first aid method. It is harmful in case of dermal absorption.	1. Storage of an inhibitor with strong oxidizers, acids shall be prohibited, as their interactions result in sudden heating, boiling with spattering, flashing, explosive and/or toxic vapor emissions. Products containing amines and sulfites shall not be stored in close proximity; otherwise, their vapors can react and produce visible particles in air. It is prohibited to use carbon steel for storage purposes. 2. Use, storage, or decantation near heat sources, sparking equipment or open flames shall be prohibited. A container with the material shall be sealed when the product is not used.	1. Provide secondary containment system (leakproof storage reservoir placed on drip pan). 2. Provide sufficient spill response material in storage areas 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Ensure that storage areas have limited access. 5. Perform OH&IS briefings for persons in charge of storage and handling of hazardous material. 6. Perform inspections of storage areas 7. Perform verification of compliance with OH&IS rules

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
			<p>It can cause dermal allergic reactions. It causes intoxication in case of inhalation, skin contact, and ingestion.</p> <p>When ingested, it causes chemical burns of mouth, throat, and stomach. A potential risk of reproductive function disorder.</p> <p>At high concentrations, it causes an irritating effect on upper air passages and lungs. Vapors can have an aggressive evil smell resulting in a physiological challenge response such as a headache, nausea, and vomiting.</p> <p>In case of contact with eyes, it causes irritation, burns, and persistent eye tissue injuries.</p> <p>An inflammable liquid; it emits vapors producing combustible mixtures at the flash point and higher temperatures.</p> <p>In case of fire, carbon oxides (COx) and nitrogen oxides (NOx) are emitted.</p>	<p>The fire and spill response equipment shall be prepared permanently for operation.</p> <p>3. A water source to rinse eyes and skin shall be accessible.</p> <p>4. Skin and eye contacts shall be avoided. When handling the material, special clothes, PVC gloves and eye/face protection equipment shall be used. Gloves shall be replaced immediately, if wear marks and/or loss of sealing are observed. When the MAC is exceeded, it is recommended that a filtering protective mask or oxygen breathing protective mask with a forced air supply and closed-type gas helmet be used.</p> <p>5. In case of health problems, call immediately a doctor.</p> <p>6. First aids:</p> <p>In case of inhalation:</p> <p>The affected person shall be placed in open air, and expected treatment shall be provided. Call a doctor;</p> <p>In case of skin contacts:</p> <p>Take off the contaminated clothes.</p> <p>Rinse immediately the contaminated area with a large amount of water for at least 15 minutes. In case of a large rinsing area, take shower. Call immediately a doctor. The</p>	

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
Turbotect	4	Unspecified	<p>Empty containers can contain product residues. Those cannot be pressed, cut, heated, welded or exposed to open flames or other ignition sources.</p>	<p>contaminated clothes, footwear, and leather goods shall be withdrawn and disposed or undergo chemical cleaning before used again.</p> <p>In case of eye contacts: Rinse immediately with the eyelids open for at least 15 minutes. Call immediately a doctor;</p> <p>In case of ingestion: DO NOT CAUSE VOMITING. If the victim is bright-eyed, wash the mouth and give water to drink. Call immediately a doctor. A probability of damage to the mucous coat of stomach is a contraindication to rinsing of the same. A doctor's opinion shall be based on an individual response of the victim and used for monitoring of the symptoms and clinical state.</p>	
			<p>A water-based detergent concentrated for wet cleaning of GTU compressors. A special mixture of non-ion-containing surfactants dissolved in de-ionized water.</p> <p>It causes irritation to a medium and heavy extent when contacting with eyes.</p> <p>In case of ingestion, it</p>	<p>1. Any ingestion, eye and skin contacts shall be prohibited.</p> <p>2. When handling, special clothes, gloves, goggles shall be used.</p> <p>3. First aids: In case of eye contacts: Rinse the eyes with clear water for at least 10 minutes with the eyelids open. Call a doctor;</p> <p>In case of skin contacts: Take off the contaminated clothes and</p>	<p>1. Provide secondary containment system (leakproof storage reservoir placed on drip pan).</p> <p>2. Provide sufficient spill response material in storage areas</p> <p>3/ Work out an emergency procedure. Make employees aware of this procedure.</p> <p>4. Ensure that storage areas have limited access.</p> <p>5. Perform OH&IS briefings for persons in charge of storage and handling of hazardous material.</p>

Hazardous material description	Hazard class	Working area MAC	Material properties	Safety measures and first pre-medical aid	Measures to prevent (mitigate) the impact
Hydraulic fluids (PMS-20K, AEROSHELL FLUID 41, AMG-10, etc.)	4	300 mg/m ³ (hydrocarbon vapors)	causes nausea, vomiting, diarrhea. In case of skin contacts, it causes dryness, contact dermatitis. When spilled, it produces a slippery surface.	wash the contaminated areas with soap. In case of a continuing irritant reaction, call a doctor. In case of ingestion: Rinse the mouth with water, drink 0.2-0.3 l water and cause vomiting, call a doctor.	6. Perform inspections of storage areas 7. Perform verification of compliance with OH&IS rules
			Oil designed as a working fluid for hydraulic devices. Combustible medium-flammable fluids. In case of eye and skin contacts, it can cause irritation. In case of permanent skin contacts, it causes dermatitis.	1. An oil handling room shall be equipped with a suction and exhaust ventilation system. 2. When handling, PPE shall be used such as special clothes, special footwear, gloves, protective goggles. 3. In case of oil contacts with skin and eye mucosa: 4. The skin shall be rinsed abundantly with warm soapy water, and the eye mucosa with warm water. 5. In case of ingestion: Flush the stomach, call a doctor. 6. In case of oil ignition: The following extinguishing means shall be used; water spray, foam; in case of smothering – carbon dioxide gas.	1. Provide secondary containment system (leakproof storage reservoir placed on drip pan). 2. Provide sufficient spill response material in storage areas 3. Work out an emergency procedure. Make employees aware of this procedure. 4. Ensure that storage areas have limited access. 5. Perform OH&IS briefings for persons in charge of storage and handling of hazardous material. 6. Perform inspections of storage areas 7. Perform verification of compliance with OH&IS rules

* - specified materials are only used at Portovaya CS

Appendix № 32-03-06-01-13

Industrial environmental monitoring plan

1 Purposes

A purpose of industrial environmental monitoring (IEM) is to obtain and provide to Company's management and environmental service department the reliable information about state of environment in the area of Project influence, allowing prompt management decisions, in order to:

- assess the environment state in the areas of potential adverse impact from the Project;
- identify the causes of environment component state changes;
- assess the efficiency and effectiveness of nature protection measures;
- provide an opportunity for planning and implementation of activities to mitigate environmental risks and prevent occurrence of adverse situations before damage is caused the environment.

Environmental Monitoring Plan should be considered in combination with other Plans of the Company:

- Environmental Management Plan.
- Physical Impact Management Plan.
- Atmospheric Emission Management Plan.
- Waste Management Plan.
- Water Resources Management Plan.
- Fauna and Flora Impact Management Plan.
- Specially Protected Environmental Territory Impact Management Plan.

2 Statutory and other requirements

The IEM Plan has been developed in compliance with IFC Performance Standard 1 "Environmental and Social Risk and Impact Assessment and Management", Performance standard 3 "Resource Efficiency and Pollution Prevention", and IFC General EHS guidelines.

A purpose of applying IFC PS1 to the Project is to identify and assess environmental risks in implementation of the Project, improve environmental efficiency of the Company's activities through operation of effective management systems.

In compliance with IFC PS1 the Company shall integrate an environment monitoring procedure. If a third party is responsible for management of specific risks and impacts and

implementation of appropriate actions to mitigate the effects, the Company will cooperate with it in the course of arrangements for and monitoring of such actions. The monitoring extent shall be comparable with the size of environmental risks relating to the Project and the compliance requirements.

According to IFC PS3, during the whole project life-cycle the Company is required to consider ambient conditions and apply principles and techniques of rational use of resources and pollution prevention that are best suited to avoid or, where avoidance is not feasible, minimize or reduce adverse impacts on human health and the environment while remaining technically and financially feasible and cost-effective. The principles and techniques applied during the project lifecycle should be tailored to the hazards and risks associated with the project specific features and consistent with good international industry practice, as outlined in various internationally recognized sources, including IFC General EHS Guidelines.

3 Industrial environmental monitoring system

IEM is a measurement system of regular monitoring, assessment and forecasting of environment state in the area affected by facility in operation.

The IEM system is expected to achieve the following objectives:

- obtain measurement data on contamination and status of controlled environment components in the course of operation of industrial facilities;
- assess the environmental status of controlled environment components based on the measurement and monitoring data with regard to the effective standard rates and limits on nature use, the sanitary and hygienic code and regulations as well as other documents approved at the federal and regional levels, and comply with relevant IFC performance standards and general EHS guidelines;
- accumulate and store information about environment state, provide access to current and archived data;
- present promptly the monitoring data to users concerned, employees of environment protection department, and the operating company's management;
- provide information support in the course of scheduled and emergency actions under contingency and emergency situations.

The basic principles of the IEM system development are as follows:

- central acquisition of information from locally distributed IEM system facilities, a unified system analysis of this information;
- a system development structure that corresponds to the facility management structure;

- information technology uniformity in respect of all the IEM system components;
- system transparency, allowing to perform its step-by-step development and modification.

IEM of CS “Portovaya” and North-European gas pipeline linear part from CS “Volkhovskaya” to the Portovaya Bay is implemented by personnel of environmental laboratory of engineering technical center branch (EL ETC) and a third party laboratory (for sampling of specific substances and measuring parameters that are beyond the scope of EL ETC accreditation). The work contract with a third party special organization is concluded by EPT PDD following tender procedure. The organization involved in work performance has to be certified and accredited for corresponding type of work.

The EPT PDD at corporate level, and Portovoe Branch at branch level, are responsible for monitoring implementation.

IEM of CS “Portovaya” and North-European gas pipeline linear section from CS “Volkhovskaya” to the Portovaya Bay is implemented under a plan provided in Table 13.1.

In 2014 the Company carried out the Project IEM following and extended programme, which included annual observations of flora and fauna and monitoring of SPET ”Rakovye ozera” (Table 13.2).

Since the results of flora and fauna monitoring showed absence of adverse impact from CS “Portovaya” and linear section of NEGP operation on flora and fauna species, this type of activity was ceased since 2015.

In view of the fact that monitoring of SPET “Rakovye ozera” showed absence of negative impact from Project operation on the SPET environmental system, this type of research was also ceased.

The Company prepares annually a comprehensive report including a description of monitoring details (methodology, reference point locations, applicable standards, etc.), and a detailed research data analysis.

Table 13.1.

IEM Plan for the operation period of IEM CS “Portovaya” and North-European gas pipeline linear section from CS “Volkhovskaya” to the Portovaya Bay

Controlled environment component	Controlled facilities / areas		Controlled parameters	Control methods and tools	Control frequency	
	Description	Location				Quantity
Atmospheric air	Stack KTO-50.K40.KS	CS “Portovaya” site	1	<i>Polluting substances concentrations:</i> – carbon oxide, – nitrogen oxide; – nitrogen dioxide; – solid particles (PM ₁₀ , PM _{2.5}); – sulfur dioxide; – carbon (soot); – benz(a)pyrene	Measurement tools of accredited laboratory	Every three months
	Stack KTO-1000.BM.KSZH	CS “Portovaya” site	2	<i>Polluting substances concentrations:</i> – nitrogen oxide; – nitrogen dioxide; – solid particles (PM ₁₀ , PM _{2.5}); – sulfur dioxide; – benz(a)pyrene	Measurement tools of accredited laboratory	Every three months
	Regeneration gas heater	CS “Portovaya” site	4	<i>Polluting substances concentrations:</i> – carbon oxide, – nitrogen oxide; – nitrogen dioxide;	Measurement tools of accredited laboratory	Every three months
	HTF heater	CS “Portovaya” site	2	<i>Polluting substances concentrations:</i> – carbon oxide, – nitrogen dioxide;	Measurement tools of accredited laboratory	Every three months

Controlled environment component	Controlled facilities / areas		Controlled parameters	Control methods and tools	Control frequency
	Description	Location			
			<ul style="list-style-type: none"> – nitrogen oxide; – nitrogen dioxide; 		
LP heater	CS “Portovaya” site	1	<i>Polluting substances concentrations:</i> <ul style="list-style-type: none"> – carbon oxide, – nitrogen oxide; – nitrogen dioxide; 	Measurement tools of accredited laboratory	Every three months
GPU	CS “Portovaya” site	8	<i>Polluting substances concentrations:</i> <ul style="list-style-type: none"> – carbon oxide, – nitrogen oxide; – nitrogen dioxide; 	Measurement tools of accredited laboratory	Every three months
Power station for own needs	CS “Portovaya” site	14	<i>Polluting substances concentrations:</i> <ul style="list-style-type: none"> – carbon oxide, – nitrogen oxide; – nitrogen dioxide; – methane – benz(a)pyrene 	Measurement tools of accredited laboratory	Every three months
Sewage treatment plant	CS “Portovaya” site	1	<i>Polluting substances concentrations:</i> <ul style="list-style-type: none"> – dihydro sulphide; – hydroxybenzole; – SPM; – Nitrogen dioxide 	Measurement tools of accredited laboratory	Once a year
Chemical lab	CS “Portovaya” site	1	<i>Polluting substances concentrations:</i> <ul style="list-style-type: none"> – Nitrogen dioxide; 	Measurement tools of accredited laboratory	Once a year

Controlled environment component	Controlled facilities / areas		Controlled parameters	Control methods and tools	Control frequency
	Description	Location			
			<ul style="list-style-type: none"> – Dihydro sulphide; – Acetone; – Benzene; – Kerosene; – Alkanes 		
	Ecological lab	CS “Portovaya” site	1 <i>Polluting substances concentrations:</i> <ul style="list-style-type: none"> – trichloromethane; – Tetrachloroethane 	Measurement tools of accredited laboratory	Once a year
	SPZ of CS “Portovaya”	In Settlement of Bolshoi Bor	1 <i>Polluting substances concentrations:</i> <ul style="list-style-type: none"> – nitrogen oxide – nitrogen dioxide – carbon oxide – sulfur dioxide – sulphurated hydrogen – methane – solid particles (PM₁₀, PM_{2.5}). – ozone noise levels (equivalent and maximum)	Measurement tools of accredited laboratory	Every three months
		At SPZ boundary	3 <i>Polluting substances concentrations:</i> <ul style="list-style-type: none"> – nitrogen oxide – nitrogen dioxide – carbon oxide – sulfur dioxide – sulphurated hydrogen 	Measurement tools of accredited laboratory	Every three months

Controlled environment component	Controlled facilities / areas			Controlled parameters	Control methods and tools	Control frequency
	Description	Location	Quantity			
Surface water of water bodies	Potovsky Creek	20 m upstream (background), 20 m downstream of outlet №1 №2	2	<ul style="list-style-type: none"> – methane – solid particles (PM₁₀, PM_{2.5}) – ozone – noise levels (equivalent and maximum) – temperature; – hydrogen ion exponent (pH); – suspended matter; – BOD_{total}; – COD; – dissolved oxygen; – dry residue. – ammonia nitrogen – nitrite nitrogen – nitric nitrogen – total nitrogen – total phosphorus; – phosphate phosphorus; – chloride ion; – sulfate ion; – total nitrogen; – total iron; – Anionic surface active agent (ASAA); – phenols; – petroleum products 	Measurement tools of accredited laboratory	2 points 6 times a year (May – October)
	Sea water	– Water intake from Finnish Bay	1	<ul style="list-style-type: none"> – temperature; 	Measurement tools of accredited	1 point Once a year

Controlled environment component	Controlled facilities / areas		Controlled parameters	Control methods and tools	Control frequency	
	Description	Location				Quantity
		for the firefighting needs	<ul style="list-style-type: none"> – hydrogen ion exponent (pH); – suspended solids; – COD; – dissolved oxygen; – dry residue. – ammonia nitrogen – nitrite nitrogen – nitric nitrogen – total nitrogen – total phosphorus; – phosphate phosphorus; – chloride ion; – sulfate ion; – total iron; – ASAA; – phenols; – petroleum products 	laboratory		
Surface water of water bodies	Water treatment facilities for utility waste water KOU 40-BIO	CS «Portovaya»	2	<ul style="list-style-type: none"> – hydrogen ion exponent (pH); – suspended solids; – BODtotal; – COD; – dry residue. – phosphate phosphorus; – chloride ion; – sulfate ion; – ammonia nitrogen – nitrite nitrogen 	Measurement tools of accredited laboratory	2 points 12 times a year

Controlled environment component	Controlled facilities / areas			Controlled parameters	Control methods and tools	Control frequency
	Description	Location	Quantity			
				<ul style="list-style-type: none"> – nitric nitrogen – total iron; – ASAA; – phenols; – petroleum products 		
Surface water of water bodies	Water treatment facilities for storm water KOU 20-D	CS «Portovaya»	2	<ul style="list-style-type: none"> – hydrogen ion exponent (pH); – petroleum products – suspended solids; – температура; 	Measurement tools of accredited laboratory	2 points 12 times a year
Surface water of water bodies	Water treatment facilities for storm water KOY 60-D	CS «Portovaya»	2	<ul style="list-style-type: none"> – hydrogen ion exponent (pH); – petroleum products – suspended solids; 	Measurement tools of accredited laboratory	2 points 4 times a year
Surface water of water bodies	Discharge outlet №1 into Portovyy Creek	1,2 km to the south from CS «Portovaya»	1	<ul style="list-style-type: none"> – BODtotal; – suspended solids; – dry residue – COD; – ammonia nitrogen – nitrite nitrogen – nitrate nitrogen – total nitrogen – total phosphorus; – phosphate phosphorus; – chloride ion; – sulfate ion; – total iron; – ASAA; – phenols; 	Measurement tools of accredited laboratory	1 point 12 times a year

Controlled environment component	Controlled facilities / areas		Controlled parameters	Control methods and tools	Control frequency	
	Description	Location				Quantity
			<ul style="list-style-type: none"> – petroleum products – temperature; – hydrogen ion exponent (pH); – manganese 			
Surface water of water bodies	Discharge outlet №2 into Portovyy Creek	1,2 km to the south from CS «Portovaya»	1 <ul style="list-style-type: none"> – hydrogen ion exponent (pH); – petroleum products – suspended solids; – dry residue – BODtotal; – ammonia nitrogen – Total iron 	Measurement tools of accredited laboratory	1 point 4 times a year	
Surface water of water bodies	Drainage channel from the points of point of influx of west and east channels	1 km to the south from CS «Portovaya»	1 <ul style="list-style-type: none"> – hydrogen ion exponent (pH); – petroleum products – suspended solids; 	Measurement tools of accredited laboratory	1 point 4 times a year	
Surface water of water bodies	Discharge outlet №1 into Portovyy Creek Discharge outlet №2 into Portovyy Creek	1,2 km to the south from CS «Portovaya»	2	<i>Bacteriologic figures:</i> <ul style="list-style-type: none"> – Pathogenic flora, – TTCB, – TCB, – Coliphages, – Viable worm ova <i>Morphometric and hydrologic characteristics of water body:</i> <ul style="list-style-type: none"> – Water flow rate at discharge point 	Measurement tools of accredited laboratory	1 point 12 times a year 1 point 4 times a year
Top soil	Water protection zone of	Within zone limits		Measurement tools of accredited laboratory	2 points 4 times a year	
			<i>Chemical parameters:</i>	Measurement tools of accredited	1 point once in 3 years	

Controlled environment component	Controlled facilities / areas			Controlled parameters	Control methods and tools	Control frequency
	Description	Location	Quantity			
	Portovvy Creek			<ul style="list-style-type: none"> - Manganese, - Phenol, - Total iron, - Chlorides, - Ammonium nitrogen, - Nitrate nitrogen, - Petroleum products <p><i>Microbiologic figures:</i></p> <ul style="list-style-type: none"> - Pathogenic enteral protozoan cysts, - Worm ova and larvae (viable), - Synanthropic fly larvae and pupae, - CBGB index (lactose-positive Bacillus coli - LPC), - Enterococcus, index (fecal streptococcus), <p>Pathogenic enterobacteria, including salmonella.</p>	laboratory	
Subsurface water	Control point of subsurface water for household and drinking purposes	Artesian wells and Potable water treatment plant (PWTP) (3 points, Distributing network (2 points)	5	Water flow rate during a reported period, m ³	Recorded by metering devices	Once per month / once per three months / once a year

Controlled environment component	Controlled facilities / areas			Control methods and tools	Control frequency
	Description	Location	Quantity		
			<ul style="list-style-type: none"> – odor, – flavor, – chromaticity, – turbidity 	accredited laboratory	times a year, 3 points – 12 times a year
			<p><i>Generalized figures:</i></p> <ul style="list-style-type: none"> – hydrogen ion exponent (pH), – total mineralization (dry residue), – total hardness, – permanganate value, – petroleum products, – anionic active surface agents (AASA), <p><i>Inorganic substance concentrations:</i></p> <ul style="list-style-type: none"> – Aluminum, – Barium – Beryllium – Boron (total), – Iron (total), – Cadmium (total), – Manganese (total), – Copper (total), – Molybdenum (total), – Arsenic (total), – Nickel (total), 	Measurement tools of accredited laboratory	3 points 4 times a year; 2 points once a year

Controlled environment component	Controlled facilities / areas			Controlled parameters	Control methods and tools	Control frequency
	Description	Location	Quantity			
				<ul style="list-style-type: none"> - Nitrates, - Mercury (total), - Lead (total), - Selenium (total), - Strontium, - Sulfates, - Fluorides, - Chlorides, - Hexabasic chrome, cyanides, - Zinc. 		
				<i>Microbiologic figures:</i> <ul style="list-style-type: none"> - TTCB, - TCB, - TMN - Coliphage - legionella 	Measurement tools of accredited laboratory	2 points 4 times a year; 3 points – 12 times a year
				<i>Radiological figures:</i> <ul style="list-style-type: none"> - Specific total α-activity, - Specific total β-activity, - Radon-222 	Sampling, measurement tools of contracted specialist company	2 points once a year
Subsurface water		Wells in Settlement of Bolshoy Bor	5	<ul style="list-style-type: none"> - temperature - subsurface water level 	Measurement tools of accredited laboratory	5 wells 3 times a year

Controlled environment component	Controlled facilities / areas			Controlled parameters	Control methods and tools	Control frequency
	Description	Location	Quantity			
Flora		Monitoring wells at CS "Portovaya" site (10 pcs.) and linear part (2 pcs.)	12	<ul style="list-style-type: none"> – temperature – underground water table 	Measurement tools of accredited laboratory	12 boreholes 3 times a year
	Route monitoring zone	Throughout linear part of main gas pipeline and along CS site		<ul style="list-style-type: none"> – projective abundance assessment, – rare and protected plant species, – availability of anthropophilous species, – penetration of weed species in natural plant communities, – availability and identification of forest crop drying causes, – mechanical disturbances of vegetation cover 	Visually	year 2014
Fauna	Route monitoring zone	Throughout linear part of main gas pipeline and along CS site		<ul style="list-style-type: none"> – zoocenosis structure and species diversity: amphibians, reptilians, birds, mammals. – species recorded in the RF Red Book and Leningrad Region Red Book – replacement of forest and forest edge avifauna by brush and meadow one, reduction in species numbers – availability of hunting animal species, their migration 	Visually	year 2014

Controlled environment component	Controlled facilities / areas			Controlled parameters	Control methods and tools	Control frequency
	Description	Location	Quantity			
				and reappearance in common habitats – adaptability of animal populations to changing habitats.		
Geologic environment	Remote probing zone of dangerous geologic processes	Portovaya CS site and 100m wide area adjacent to linear part		<ul style="list-style-type: none"> - process manifestation numbers within control zone limits; - process activity extent (active, decaying, inactive); - shape and dimensions (length, width, depth); - plan locus outlines of dangerous geologic processes; - internal locus structure elements (moors, mineral islands, etc.); - distances from swamping and waterlogging loci to CS facilities; - process development rates, coverage area, assessment of threat to linear and site facilities (as per aerospace photograph interpretation) 	Aerospace photograph interpretation by means of contracted specialist company	2 times a year in spring and autumn. Further, as required

Table 13.2.

The IEM Plan for SPET "Rakoviye Ozera" for 2014

Controlled environment component	Controlled figures	Frequency	Responsible for monitoring implementation
Atmospheric air	<ul style="list-style-type: none"> – Weather parameters <i>Substance concentrations:</i> – nitrogen oxide, – nitrogen dioxide, – sulfur dioxide, – sum of hydrocarbons (C₂ – C₁₀), – methane, – carbon oxide, – solid particles (PM₁₀, PM_{2.5}), 	2 points once a year Indicate department responsible for execution (for all points in the table)	EPD PDD
	– maximal and equivalent noise levels.	3 points once a year	EPD PDD
Soil	<ul style="list-style-type: none"> – pH of aqueous extract , <i>Substance concentrations:</i> – iron, – manganese, – copper, – lead, – zinc, – petroleum products, – volatile phenols. 	3 points once a year	EPD PDD
Flora	<ul style="list-style-type: none"> – projective abundance assessment, – rare and protected plant species, – availability of anthropophilous species, – penetration of weed species in natural plant communities, – availability and identification of forest crop drying causes, – mechanical disturbances of vegetation cover 	during a year	EPD PDD
Fauna (Aquatic organisms and ichthyocenosis of surface water bodies (Ohkotnichye Lake, Glubokoye Lake, Glubokaya River):	<ul style="list-style-type: none"> <i>Water body parameters:</i> – temperature, – odor, – turbidity, – transparence, – bottom characteristics. <i>Identification of species composition of basic aquatic organism groups:</i> 	3 points once a year	EPD PDD

Controlled environment component	Controlled figures	Frequency	Responsible for monitoring implementation
	<ul style="list-style-type: none"> – phytoplankton, – zooplankton, – benthos, – piscifauna, – aquatic organism population and biomass. <p><i>Assessment of water quality under indicator organism method:</i></p> <ul style="list-style-type: none"> – saprobity index according to Pantle and Buck (as modified by Sladeczek), – Goodnight-Whitley index as interpreted by Parele, biotic index according to Woodiwiss, – assessment of water quality class. 		
Fauna (terrestrial animals)	<ul style="list-style-type: none"> – zoocenosis structure and species diversity: amphibians, reptilians, birds, mammals. – species recorded in the RF Red Book and Leningrad Region Red Book – replacement of forest and forest edge avifauna by brush and meadow one, reduction in species numbers – availability of hunting animal species, their migration and reappearance in common habitats – adaptability of animal populations to changing habitats 	during a year	EPD PDD
Bottom sediments (Glubokoye Lake, Glubokaya River, Okhotnichye Lake)	<p><i>Generalized figures:</i></p> <ul style="list-style-type: none"> – hydrogen ion exponent (pH), <p><i>Substance concentrations:</i></p> <ul style="list-style-type: none"> – petroleum products, – volatile phenols, – iron, – manganese, – copper, – lead, – zinc. 	3 points once a year	EPD PDD
Surface water (Glubokoye Lake, Glubokaya River, Okhotnichye Lake)	<p><i>Generalized figures:</i></p> <ul style="list-style-type: none"> – temperature, – transparence, – odor, – chromaticity, 	3 points once a year	EPD PDD

Controlled environment component	Controlled figures	Frequency	Responsible for monitoring implementation
	<ul style="list-style-type: none"> – hydrogen ion exponent (pH), – dissolved oxygen, – suspended matter, – dry residue, – total hardness, – hydrogen carbonates, – BOD₅, – COD, <p><i>Chemical figures:</i></p> <ul style="list-style-type: none"> – ammonium ion, – nitrate anions, – nitrite anions, – sulfate anions, – chloride anions, – fluoride anions, – phosphates (in terms of phosphorus), – petroleum products, – AASC, – phenols, – total dissolved iron, – nickel, – molybdenum, – manganese, – potassium, – sodium, – calcium, – magnesium, – lead, – copper, – zinc, – mercury. 		
Surface water (Glubokoye Lake, Glubokaya River, Okhotnichye Lake)	<i>Measurement of wastewater toxicity:</i> <ul style="list-style-type: none"> – Bacteria – Daphnia – Chlorella 	3 points once a year	EPD PDD

Appendix 32-03-06-01-14

Environmental management plan

1 Purposes

The purpose of the Environmental Management Plan development is to develop a set of measures to control Environmental and Social Management System (ESMS) of the Project, aiming to maintain the existing ESMS system, to achieve key performance indicators of the system in operation, and constant improvement.

The Environmental Management Plan should be considered in combination with other Plans of the Company:

- Waste Management Plan.
- Atmospheric Emission Management Plan.
- Water Resources Management Plan.
- Industrial Environmental Monitoring Plan.

2 Statutory and other requirements

The Environmental Management Plan has been developed in compliance with **IFC Performance Standard 1 "Environmental and Social Risk and Impact Assessment and Management"**.

According to the Standard requirements, the Company is required to perform environmental and social assessments, as well as create and maintain the ESMS, suitable for the character and scope of the project, and comparable to the level of related environmental and social risks and impacts. The ESMS shall include the following: policy; risks and impacts identification; management programs; organization structure and personnel competence; emergency preparedness and response actions; interaction with stakeholders; monitoring and control.

The Company is required to develop a general policy in order to define environmental and social goals and principles, for the project implementers to follow in order to provide sustainable environmental and social indicators of activities, and integrate and follow up a procedure to identify the environmental and social risks and impacts of the project.

According to the social and environmental policy and its goals and principles, the Company is required to develop management programs indicating actions for performance indicators improvement, mitigation of the environmental and social risks and impacts revealed in the project, and mitigation of negative environmental and social effects related to them.

In a hierarchy of mitigation mechanisms for revealed risks and impacts, the preferred actions are those allowing to avoid an impact rather than to minimize it. If revealed risks and impacts are unavoidable, the Company shall define actions to mitigate them and achieve certain performance indicators, as well as implement corresponding measures providing for the project implementation in compliance with applicable statutory regulations, at that satisfying the requirements of IFS PS 1–8 and IFC General EHS Guidelines.

The Environmental and social action Plans are developed within framework of management programs, to formulate the desirable results and actions required to solve the problems revealed during risks and impacts identification process. Such results and actions shall, whenever possible, be measurable, and include such components as performance indicators, target indicators and acceptability criteria that can be monitored during certain periods, as well as expected resources to spend and responsibility for implementation.

The Company shall create, maintain, and reinforce, where necessary, an organizational structure defining functions, responsibility and authorities for ESMS implementation. Specific members of staff, including management representative (representatives), shall be appointed, with functions and authorities defined clearly. Key environmental and social functions shall be defined clearly and communicated to respective personnel, as well as to other Company employees.

The Company personnel directly responsible for the environmental and social effects of the project must have the knowledge, competence and proficiency required for the performance of their work.

The ESMS shall define and maintain an emergency and prompt response readiness system, in order for the Company in cooperation with corresponding third parties to be ready to respond as appropriate to accidents and emergencies related to the project and to take actions to prevent and reduce harm caused to the people health and environment.

The Portovoe LPMMP branch has developed the following Emergency Response plans:

- Accident containment and mitigation of consequences at hazardous industrial facility "Compressor station site of Portovoe LPMMP", including emergency response plan in case of emergency at CS "Portovaya", as well as emergency response procedure;

Accident containment and mitigation of consequences at hazardous industrial facility "Linear section of main gas pipelines of Portovoe LPMMP", including emergency response plan in case of emergency at linear section of main gas pipelines of Portovoe LPMMP, as well as emergency response procedure.

The Company shall integrate procedures for monitoring and performance assessment of the management program and of the compliance with the corresponding statutory and (or) contract

obligations and regulatory requirements. In case of implementation of projects with a significant impact, the Company shall engage third party experts in verification of monitoring data.

The Company shall record the monitoring results, as well as define and take into account the corrective and preventive actions necessary when making changes to the program and management plans.

The senior management of the Company shall receive periodic performance reports of ESMS functioning, based on systematically collected and analyzed data. Based on the results indicated in such performance reports, the senior management shall take measures required to achieve the goals of the Company policy, procedures, methods and plans implementation, and to provide for their efficient performance.

3 General information on environment protection activities of the Company

3.1 The role of the ESMS in the Company activity

The ESMS is a part of the Company's environment protection and social activity, and the main principles of this activity are as follows:

- to comply with the environment protection requirements set by the Russian legislation;
- to reveal and prevent violations of environment protection laws;
- to design and implement measures to improve environment protection and social activities.

ESMS is a component of the Company Integrated Management System⁷ (IMS) designed in order to achieve the Company's strategic goals in environment protection and social sphere – prevention and constant reduction of negative impact of industrial activities on the environment, as well as a sustainable use of natural resources.

The main purposes of ESMS integration in the Company are:

- systematic reduction of level of impact on the environment;
- safeguarding the community interests related to preservation of healthy environment (reduction of environmental risks for personnel and population);

⁷ The Company IMS also comprises a Quality Management System (QMS) and a Uniform Occupational Safety Management System (UOSMS).

- continuous improvement of Company’s environment protection activity and management system to regulate this activity;
- pollution prevention (the priority is given to preventive actions that help avoiding negative impact on the environment, rather than efforts to minimize the consequences of such impacts).

3.2 The Industrial Environmental Control

In order to implement the principles of Company’s environment protection activity, **the Industrial Environmental Control (IEC) is performed** – a part of Company’s environment protection activity, that represents a system of actions for the environment protection, sustainable use and recovery of natural resources, as well as compliance with environment protection requirements set by the legislation.

The Industrial Environmental Monitoring (IEM) is a monitoring of environment conditions and environment contamination. IEM is performed as part of Industrial environmental control (IEC), including long-term observations of environment state, environment contamination and acts of nature occurring in the environment, as well as assessment and forecast of environment state, environment contamination at the territories of legal entities and within areas of their environmental impact (as per GOST R 56059-2014 Industrial Environmental monitoring. General Provisions).

The Appendix 13 defines the program of monitoring for various environmental components affected by Project activities. This monitoring is a part of general Company’s IEC.

The IEC is implemented in compliance with the requirements of Gazprom Transgaz Saint-Petersburg STO 32-03-01 "Integrated Management System. Industrial Environmental Control. Implementation procedure".

The IEC structure in the Company includes inspections in the following areas:

- IEC of compliance with the requirements of general environment protection laws;
- IEC of atmospheric air protection;
- IEC of water bodies protection;
- IEC of waste management;
- IEC of lands and soil protection.

The IEC main tasks include the following:

- Compliance with the requirements of environment protection law, environment protection standards, sanitary and hygienic requirements, and principles of sustainable use and recovery of natural resources, in course of industrial activities;

- Compliance with the atmospheric air protection, water bodies protection, land and soil protection requirements, as well as requirements related to hazardous industrial and consumption waste;
- Elimination of causes of potential emergencies related to excessive environmental impact on the in excess of the standards, in prompt and timely manner;
- Achieving an initial information during environmental impact monitoring by calculation and instrumental methods.

The Deputy General Director on Corporate Development and Property Management is responsible for proper IEC organization in the Company Administrative Management Directorate (AMD), and, in Portovoye branch - Chief Engineer is responsible. The EPD PDD performs the organizational supervision of IEC implementation and implements IEC at the level of Gazprom PC subsidiary (hereinafter – Company level IEC).

At the Company branches, the IEC is implemented by EP Engineer, involving the personnel of operational services in charge of respective area to be inspected. The managers of respective departments are responsible for the organization and technical support of IEC operations in the branches.

Based on the IEC results, the EP Engineer of the branch sets forth the actions to eliminate the violations revealed. The department where a violation was determined during IEC, is required to implements these actions. The person appointed to be in charge of actions to eliminate the violation, reports to EP Engineer on implementation of actions.

The EPD PDD analyses the violations revealed during implementation of IEC in Portovoye branch, and reports to the Company management on the compliance with the environment protection requirements.

Based on the information received, the Company management represented by the Deputy General Director on Corporate Development and Property Management decides upon the measures to be taken in order to comply with the environment protection law requirements.

3.2.1 IEC types in Portovoye LPMMPL branch

There are three types of IEC implemented in Portovoe branch: the inspection control, environmental analytical control and internal audit.

The Inspection Control in Portovoye branch is implemented during administrative and industrial control (AIC), as part of special purpose IEC inspections and unscheduled audit.

The inspection control as part of AIC is implemented during work of permanent commission (PC) of the branch, involving EP Engineer, as well as in cooperation with PC of Company level 4 involving EPD PDD representatives.

Special purpose IEC inspections at Portovoye LPMMPL branch of the Company level are implemented by EPD PDD personnel, as per plan of special purpose inspections, approved by the Company's Chief Engineer and confirmed by top ESMS manager - the Deputy General Director on Corporate Development and Property Management.

Based upon results of inspection control, as part of a special purpose inspection, the EPD PDD personnel issues an IEC Statement to be sent to the Portovoye branch in order to undertake measures on the violations revealed.

EP Engineer implements special purpose inspections at Portovoye branch level in accordance with IEC guidelines.

The EPD PDD personnel on the Company level and the EP Engineer of the Portovoye LPMMPL branch level carry out unscheduled inspections based on operational need in case of potential or actual emergency situation.

Environmental Analytical Control (EAC) is a quantitative assessment of actual parameters of negative impacts on the environment, using instrumental and laboratory methods, and checking their compliance with standard values.

EAC at Portovoye LPMMPL branch is implemented by personnel of environmental laboratory, the Engineering Technical Center (ITC), following a request for the required instrumental measurements. The EP Engineer issues the request annually based on the approved annual IEC scheduled plan.

The Portovoye branch has a North-European gas pipeline IEM team, including a team supervisor and two other persons. The IEM group laboratory is located in ABK building at CS "Portovaya". The team includes mobile environmental laboratory for operational monitoring of physical parameters, sampling, and samples transportation to the laboratory.

If any parameters necessary for the control implementation are missing in the accreditation of ITC environmental laboratory, the Company signs agreements with organizations that possess corresponding accreditation.

The ITC environmental laboratory is responsible for timely implementation of EAC and the tests results validity within the scope of accreditation.

EAC of compliance with limits set by environment protection standards is performed directly at the sources of negative environmental impact from Portovoye LPMMPL branch, which are a part of the controlled industrial facility.

4 The Company environmental and social management system

4.1 General characteristics of Company ESMS

The integration of ESMS in the Company is based on requirements of International Standard ISO 14001 "Environmental management systems. Requirements and manual".

ESMS is a part of the Company IMS used for development and integration of the environmental and social policy, and management of environmental⁸ and social issues⁹.

In the Company, an environmental policy¹⁰ and goals¹¹ are developed and integrated, with taking into account the legislative requirements and information on significant (substantial) environmental issues¹².

The requirements to Company EMS are set in the Environmental management system manual of PC "Gazprom", as well as in the departmental document of Gazprom transgaz Saint-Petersburg "IMS Manual. Part II. Environmental management system manual".

According to the ISO 14001 standard, the processes of EMS development, integration and maintenance comprise the main stages outlined in the figure 14.1.

The environmental policy definition is the first stage of ESMS development. The Company has developed and accepted for implementation a Policy on Quality, Environment protection, Health, Safety and Social Activity.

⁸ Environmental issue – an element of the Company's operations, products or services that can interact with the environment.

⁹ Social issue – an element of the legal entity operations, products or services that can affect health and vital activity of personnel, as well as community residing in the area of the Company's operation influence.

¹⁰ Environmental policy – intentions and trends of company activity related to environmental activity indices, officially formulated by top management.

¹¹ Environmental goal – a goal set by the company, that complies with company's environmental policy.

¹² An significant (substantial) environmental issue – environmental issue that affects or can cause a considerable environmental impact.

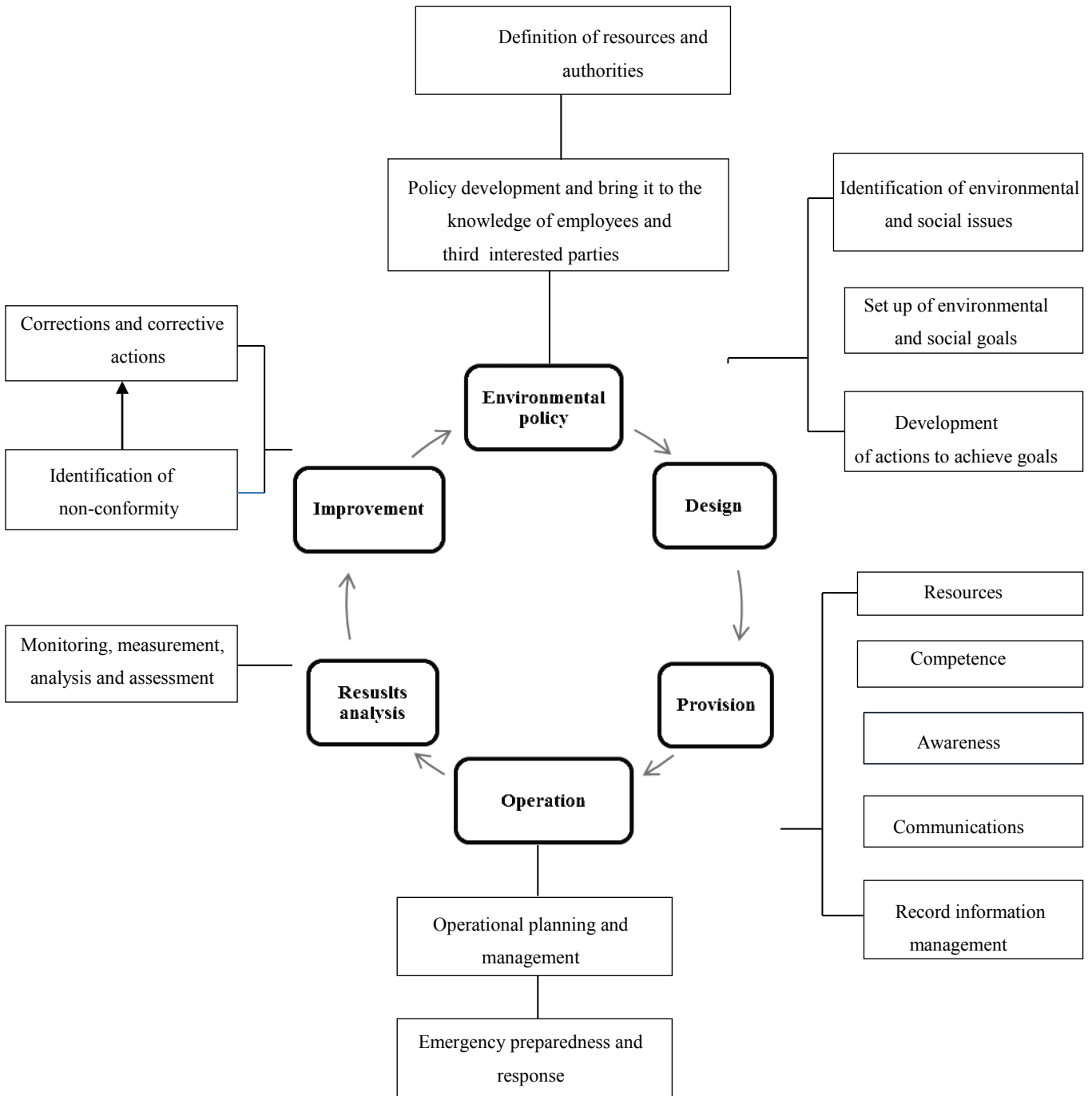


Figure 14.1.
The ESMS design and integration stages

The Company obligations regarding quality, health, safety and environment protection and social activity during the operation of the CS "Portovaya" and linear section of the North-European

gas pipeline from the CS "Volkhovskaya" to the Portovaya Bay are provided in the Appendix 1 to this Manual.

The Planning in the scope of ESMS includes the following:

- identification of environmental and social issues;
- statutory and other requirements;
- identification of environmental and social goals and tasks¹³;
- development and implementation of action program in order to achieve the goals.

Identification of environmental issues in the Company is implemented in compliance with Gazprom STO 12-1-019 Environment Protection. The Planning. Environmental issues identification procedure.

Integration and operation of ESMS is implemented at the Company's top management level and AMD department level, by means of monitoring, organization, coordination and implementation of management system, as concerns ESMS operation. At the level of Company branches, the ESMS functioning is provided by compliance with the environment protection and social requirements.

The ESMS integration and operation is implemented in compliance with the requirements of Company's documents:

- Gazprom transgaz Saint-Petersburg STO 16-01 Integrated management system. IMS procedure. The procedure of technical training organization and implementation in the branches of the "Gazprom transgaz Saint-Petersburg" LLC;
- Gazprom transgaz Saint-Petersburg STO 28-04-02 Integrated management system. Human resources management. The system of continuous professional training of the personnel. General provisions;
- Gazprom transgaz Saint-Petersburg STO 32-03-04 Integrated management system. Industrial and consumption waste management.

Internal audit is a systematic, independent and documented process of getting audit evidences and unbiased assessment of such evidences, in order to determine the rate of compliance with the ESMS audit criterions, set by the Company.

The ESMS internal audit is an IMS process aimed to support a continuous improvement of Company operation, and is performed with the purpose of:

- assess ESMS compliance with the ISO 14001 standard, the statutory requirements, corporate requirements of the PC "Gazprom", the requirements to ESMS set up by the Company;
- assess the ESMS performance;
- assess the potential for improvement of ESMS.

The internal audits are carried out in compliance with Gazprom transgaz Saint-Petersburg STO 32-04-02 Integrated management system. The process of internal audit of integrated management system. Audit organization and implementation.

In Company's AMD and branches, the Quality Office of the Prospective Development Department (PDD QO) is responsible for organization and implementation of scheduled internal IMS audits.

The internal IMS audit program is designed by PDD QO and includes scheduled audits for Company's AMD and branches. The Program is developed together with Schedule of internal IMS audits for the branches, for three year period, including the year of Program implementation.

The internal IMS audit in AMD and branches is carried out by an audit team led by team supervisor or by one of auditors, who acts as team supervisor, provided that he is trained on all management systems included in IMS.

Based on results of EMS internal audits, an Internal Audit Report is issued, with Act on IMS internal audit non-conformity/notification, attached to the Report.

In case the non-conformities were registered in the course of audit, the audited facility manager is required:

- determine the reasons of such non-conformity ;
- define the measures and deadlines for elimination (correction) of such non-conformity ;
- assess the need to implement the corrections and/or corrective actions (CA);
- identify the corrections and/or corrective actions and their implementation deadlines (if necessary).

The procedure of non-conformity handling also includes: implementation of the developed actions; monitoring of implementation of planned corrections and corrective actions; assessment of efficiency of measures on corrections and corrective actions implemented.

The planning and implementation of non-conformity (violation) elimination measures can be carried out both during and after the internal audit, based on the decision of audited facility

manager, depending on the severity of violation.

The internal audit effectiveness assessment is provided by the PDD QD in the Summary report on IMS functioning, which is prepared as part of the «Company Management review of IMS» process.

The purpose of *control (monitoring and measurement)* is to monitor regularly the ESMS key performance indicators.

The procedure of assessing the compliance with statutory and other requirements is carried out in terms of AIC, IEC, EMS internal audit, during the inspections of readiness of facilities and structures for operation in autumn and winter period.

In order to carry out ESMS control, the following documents are developed in the Company:

- Gazprom transgaz Saint-Petersburg STO 32-03-05 Integrated management system. Monitoring and measurement. Implementation procedure;
- Gazprom transgaz Saint-Petersburg STO 32-03-01 Integrated management system. Industrial environmental control. Implementation procedure;
- Gazprom transgaz Saint-Petersburg STO 32-04-04 Integrated management system. Non-conformity management. Corrections and Corrective actions. Planning and implementation procedure;
- Gazprom transgaz Saint-Petersburg STO 32-04-03 Integrated management system. Documents and records management.

ESMS monitoring is a monitoring of key performance indicators (KPI) of ESMS functioning in Portovoye LPMMP branch, an assessment of compliance of EMS functioning with statutory and other requirements, identification and implementation of corrective actions, based on results of environmental control and the audit procedures.

ESMS KPI monitoring and measurement is carried out in compliance with Gazprom transgaz Saint-Petersburg STO 32-03-05 and includes IEM (environmental impact levels measurement), corporate and statistical reporting, and internal audits.

Project ESMS monitoring flow chart is provided below (figure 14.2).

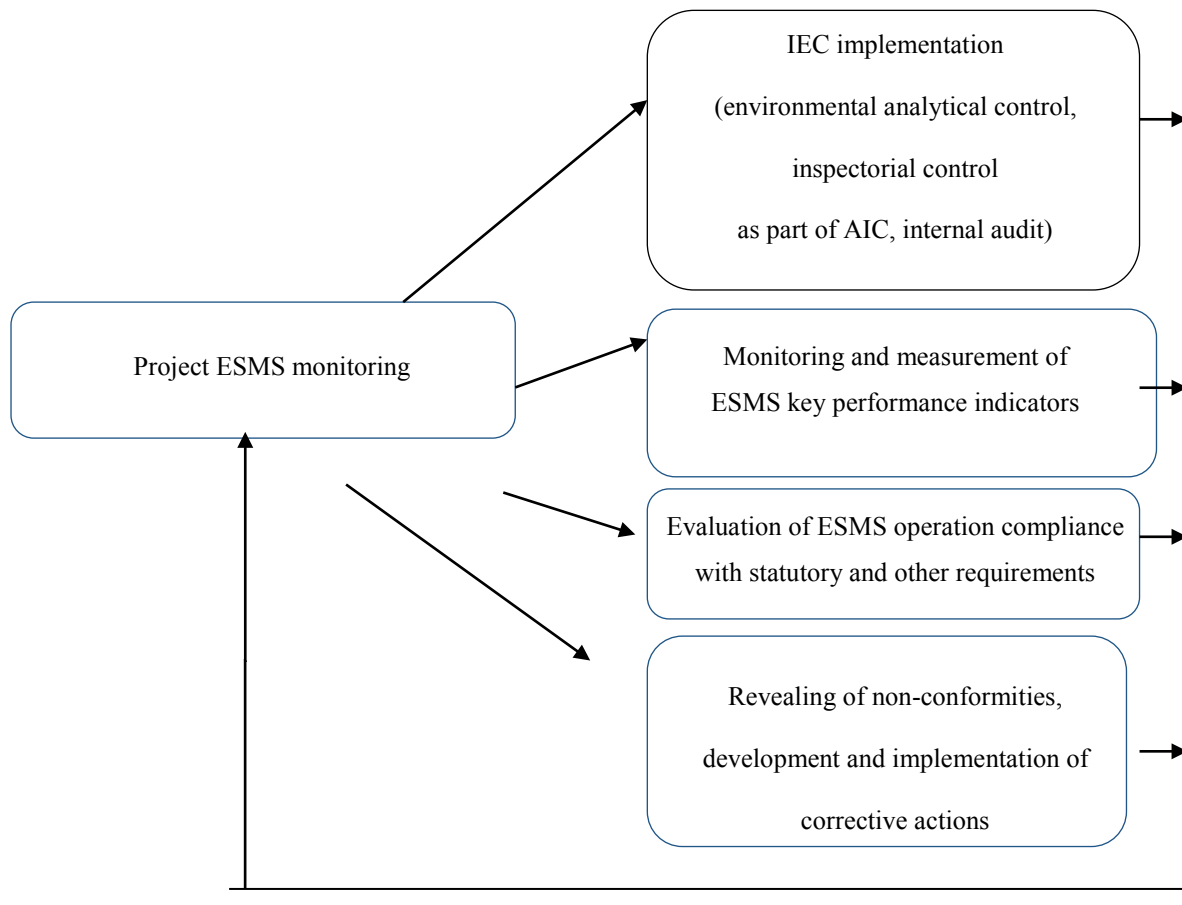


Figure 14.2.

Project ESMS Monitoring

ESMS *analysis* is general evaluation of EMS results for appropriateness and efficiency of the system, and determination of further improvement directions for it.

The Management review procedure is established in Gazprom transgaz Saint-Petersburg STO 32-04-01-2012 Integrated management system. Management review of integrated management system process. Implementation procedure.

A *continuous improvement* means the EMS enhancement process aiming to improve general environmental and social performance as per Company policy on Quality, Environment protection, Health, Safety and Social Activity. Continuous improvement process complies with sustainable development and industrial efficiency principles.

The Company obtained ISO 14001:2004 conformity certificates for ESMS compliance with the requirements of international standard in the following certification societies: RUSSIAN REGISTER, GAZPROMSERT, SFS-Inspecta Certification Finland, DQS and IQNet certification systems.

The Project ESMS management can be introduced as follows (figure 14.3):

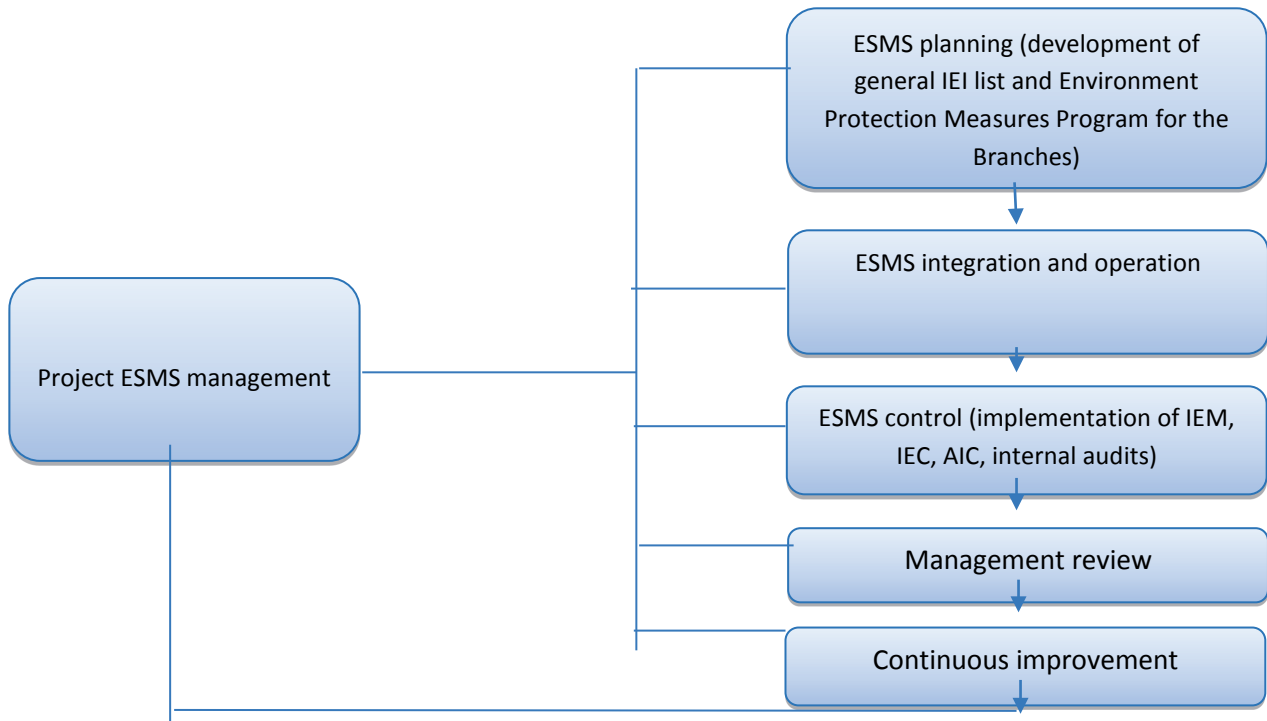


Figure 14.3.

Project ESMS management

Table 14.4.

Environmental Management Plan for CS "Portovaya" and linear part of the North-European gas pipeline from CS "Volkhovskaya" to the Portovaya Bay

Component	The component implementation task	Action	Level (Company/Branch) Person responsible for action implementation	Frequency
Environmental policy	Implementation of Environment protection, Health, and Safety obligations	The Personnel apply Environment protection, Health and Safety obligations during planning and implementation of industrial operations	Branch Chief Engineer	Continuously
	Identification of environmental issues	Creation of work groups responsible for ESMS operation	Branch	Annually
Setting up the environmental targets	Chief Engineer			
Designing and implementing the environment protection actions	Company EPD PDD			
Design	To determine statutory and other requirements to environmental issues	Introduction of statutory and regulatory provisions to the Personnel using Company information sources	Company	Continuously
			EPD PDD	

Component	The component implementation task	Action	Level (Company/Branch) Person responsible for action implementation	Frequency
<p align="center">Integration and operation</p>	<p align="center">To assign resources, roles, responsibilities, and permissions</p>	<p>The personnel complies with the requirements of Company standards describing ESMS processes and procedures</p>	<p align="center">Branch</p> <hr/> <p align="center">Chief Engineer</p>	<p align="center">Continuously</p>
		<p align="center">Planning and implementation of internal audits</p>	<p align="center">PDD QO</p>	<p align="center">According to the Internal audits program</p>
		<p align="center">Analysis of internal and external audits data</p>	<p align="center">PDD QO</p>	<p align="center">Upon implementation of audits and inspections</p>
		<p align="center">Organization of Planning and implementation of actions to eliminate the non-conformities revealed in the course of inspection and causes via such non-conformities</p>		

Component	The component implementation task	Action	Level (<u>Company/Branch</u>) Person responsible for action implementation	Frequency
		Provision for annual summary report design on the internal audit results	Company _____	Annually
		Provision for constant personnel involvement in ESMS activities	EPD PDD	
		Control of development and implementation of environment protection measures		Continuously
		Development and provision for implementation of corrective and preventive actions when non-conformities are revealed	Branch _____	
		Provision for ESMS records keeping	Departments managers	
		Providing ESMS information and training for subordinate employees		When necessary
		Provision of necessary ESMS information to the parties concerned		When necessary
		Monitoring of compliance with environment protection requirements in course of industrial operation	Branch _____	Continuously

Component	The component implementation task	Action	Level (Company/Branch) Person responsible for action implementation	Frequency
		Monitoring of correct record keeping of primary accounting	EP Engineer	As per established terms
		Preparation of EP reports		Continuously
		ESMS performance control		
	Providing competence, training and knowledge	Organization of personnel training on waste management and environment protection	Company	According to the training schedule
		Organization of EP technical training	HRD	
			Branch	
		Annual meetings of Company top management with the Branches management	EP Engineer	According to the training schedule
	Information sharing: organization of internal information sharing – an exchange of valid information on ESMS operation between the Company management and the Branches, as well as between the	Annual meetings of EP Engineers from all the Company branches	Company	When necessary
			HRD	Annually

Component	The component implementation task	Action	Level (Company/Branch) Person responsible for action implementation	Frequency
	Branches personnel,	EMS internal audits, inspections in terms of IEC , inspection of readiness of the facilities and structures for operation in autumn and winter period	Company Branch	According to the programs of internal audits and inspections implementation
		Preparation of quarterly reports	Company Branch	Quarterly
		Prompt interaction between the personnel on everyday issues	Company Branch	When necessary
		Distribution of information on EMS issues in the Company electronic documentation system	Company PDD QO	When necessary
	Information sharing: organizing an external information sharing	Provision of information on Policy, EP actions, EMS performance to the third parties concerned, by providing contact details on the Company site	Company PR and MM	When necessary

Component	The component implementation task	Action	Level (<u>Company/Branch</u>) Person responsible for action implementation	Frequency
	Documentation management	EMS documentation record keeping according to the requirements	Branch _____ Departments managers	Continuously
	Operations management	Development of standards	Company _____ EPD PDD	When necessary
Development of instructions		Branch _____ EP Engineers		
	Emergency preparedness and emergency response	Development of emergency response plans, action plans for prevention and elimination of emergency situations in the Branches	Branch _____ Chief Engineer	When necessary

Component	The component implementation task	Action	Level (Company/Branch) Person responsible for action implementation	Frequency
Control	Monitoring and measurements – ESMS KPI monitoring	Implementation of IEM –collection of data on measurement of levels of impact from Branches operation on the environment for a subsequent evaluation of compliance with the values set by standards.	Branch Chief Engineer	Appendix 13 This appendix identifies the exact control frequency for all environmental components affected
		Preparation of corporate reports: quarterly report on EMS KPI evaluation results, semiannual reports using forms No. 151-gaz and No.152-gaz, annual report using form No. 49-god (year)	Branch Chief Engineer	As per established terms The deadlines for submission of consolidated reporting are set by PC “Gazprom” and related notifications within the Company are distributed by sending the respective requests.

Component	The component implementation task	Action	Level (<u>Company/Branch</u>) Person responsible for action implementation	Frequency
		Preparation of Federal statistical reports using forms 2-TP (air), 2-TP (waste), 2-TP (water bodies), 4-OS	Branch Chief Engineer	As per established terms The deadlines for submission of state statistical reporting are set by Federal service of state statistics by issuing the annual Order.
Assessment of compliance with statutory and other requirements		Implementation of industrial and environmental control	Branch Chief Engineer	According to the IEC implementation program
Determination of non-conformities, implementation of corrective and preventive actions		Implementation of internal audits	Branch Lead auditor	According to the internal audits implementation program
		Handling actual and potential non-conformities, implementation of corrective and preventive to eliminate and avoid non-conformities	Branch Lead auditor	Upon implementation of audits and inspections

Component	The component implementation task	Action	Level (Company/Branch) Person responsible for action implementation	Frequency
	Records management	ESMS records keeping	Branch _____ Chief Engineer	Continuously
Management review	Evaluation of ESMS operation results for appropriateness and efficiency and to define directions for further improvement	Review and assessment of ESMS performance indicators, development of measures to improve ESMS	Company _____ EPD PDD PDD QO	Continuously
Continuous improvement	Implementation of measures aimed at general improvement of environmental performance in compliance with the Company IMS Policy		Company	Continuously

Appendix № 32-03-06-01-15

Public consultations and Information disclosure action Plan

1 Purpose

The goals of the Public Consultations and Information Disclosure Plan (PCIDP) are as follows:

- To define a strategic and systematic approach to interactions with stakeholders at local, national and international levels;
- To develop mechanisms of information disclosure about Project activity and ensure that stakeholders are aware of it.

PCDIP Specific objectives are:

- Identification of key stakeholders and review of interaction mechanism thereof;
- Development of actions for information disclosure and consultations with stakeholders at different levels (local, regional, international);
- Establishing a procedure for registering complaints, concerns and suggestions from stakeholders at operation stage of the Project;
- Identification of resources necessary for implementation of the plan.

The PCDIP is a "live" document that is reviewed and supplemented as new information is obtained in the course of Project operation and consultations with the local communities and other parties concerned.

2 Statutory and other requirements

The PCIDP has been developed in compliance with the requirements of IFC PS 1 “Assessment and management of environmental and social risks and impacts”. Throughout lifecycle of the Project, the Company interacts with stakeholders, providing disclosure and distribution of actual environmental and social information related to Project activities.

In accordance with IFC PS1, the Company is required to develop the mechanism of interaction with the affected communities during the whole lifecycle of the Project, as well as response mechanism to address the grievances coming from affected communities.

Interactions with stakeholders provide a basis of establishing close, positive mutual relations that are necessary for successful management of environmental and social impacts from the Project.

Interactions with the stakeholders include the following components: an analysis of stakeholders, disclosure and distribution of information, consultations with and involvement of stakeholders therein, a mechanism of submission and consideration of complaints and presentation of regular reports to stakeholders.

3 Public consultations and information disclosure action plan

3.1 Basic goals and stages of public information process

The PCIDP is designed to identify all parties interested in Project activity, or potentially affected by Project operation, to develop procedures for interaction with such parties and provide information support of this process.

Basic stages of PCIDP development and implementation are:

- identification of stakeholders;
- development of a detailed plan for information and consultation with the local communities, interactions with governmental authorities, and other stakeholders and public, at all stages of project implementation;
- supply of resources and assignment of responsible persons;
- management of complaint and request mechanism, a feedback among the entities and persons concerned, on the one part, the Company, on the other part, and Lenders, on the third part;
- providing an opportunity for all parties concerned to express opinion about Project, analysis and consideration of public opinion during project implementation.

3.2 Identification of stakeholders

The stakeholders shall be understood as persons living and/or working within Project implementation area, as well as organizations operating in the area of Project presence and /or interested in Project activity.

The key stakeholders are local communities affected (can be affected) directly or indirectly, favorably or adversely by the Project activity.

Beside, «authorized representatives of stakeholders» can be identified for certain groups attributed to “parties concerned” category. Those include persons or entities having broad support from the groups of stakeholders. They can operate as liaison persons between the Company and stakeholders (for the Project such person is the head of Bolshoy Bor settlement).

The parties capable of influencing the progress of Portovaya CS project implementation and North-European Gas Pipeline section, at operation phase, are presented by the following main groups:

- Governmental authorities;
- Land users, land plot owners;
- Contractors;
- Company's and contractors' employees;
- Gazprom PC;
- Nord Stream company (for grievances to be addressed jointly, if needed);
- Local communities;
- Mass media;
- National and international NGOs;

Summary data on stakeholders identification is provided in Table 15.1.

Table 15.1.

Summary data on identification of stakeholders

Sector	Entity/representative	Scope of interaction
Governmental authorities		
Leningrad Region	The Government of Leningrad Region	Acknowledgment of charitable activity plans, socially important events
Vyborgsky District Municipality	The Administration of Vyborgsky District Municipality The Administration of "Seleznevskoye Rural Settlement" Municipality The Administration of "Kamennogorskoye Urban Settlement" Municipality The Administration of "Goncharovskoe Urban Settlement" Municipality The Administration of "Pervomayskoe Urban Settlement" Municipality	Interactions concerning socioeconomic issues
Federal supervision authorities	The Nature Use Supervision Department for North-West federal district (St. Petersburg and Leningrad Region) The Neva-Ladoga Water Basin Authority of the Russian Federal Agency of Water Resources	Implementation of governmental environmental controls Issue of permits to pollutant emissions and contaminant discharges; waste disposal limits, acknowledgement of Maximum Permissible Emissions (MPE) Permissible Discharge Rates (PDR), Waste Disposal Standards and Waste Disposal Limits Book (PNOOLR) projects; Issue of a waste management license Acknowledgement of PDR projects, entry into contracts and getting resolutions for use of surface water bodies (at federal level)

Sector	Entity/representative	Scope of interaction
	The North-West Territorial Department for Hydrometeorology and Environment Monitoring of the Russian Federal Service for Hydrometeorology and Environment Monitoring	Governmental environmental monitoring, getting climate data
	The North-West Department of the Federal Service for Environmental, Technological and Nuclear Supervision	Maintenance of a governmental register of hazardous industrial facilities (HIF), implementation of governmental controls over operation of HIF, acknowledgement of industrial safety declarations
	The Department for Leningrad Region of the Russian Federal Service for Supervision of Consumer Rights and Human Welfare	Acknowledgement of MPE and PDR projects; Implementation of governmental controls over compliance with sanitary and hygienic regulations; Environmental monitoring at residential areas .
Founder	Gazprom PC	Gazprom PC is a primary financing source of the project implementation as well as undertakes methodological and controlling functions. It carries out regular independent audits of "Gazprom transgaz Saint-Petersburg" LLC and contractor companies at the operation phase of Portovaya CS and the gas pipeline right-of-way for compliance with the requirements of effective law, corporate regulations, and guidelines from the authorized business units of Gazprom PC.
Land users	The Forest Area "Pogranichnoye" of Forestry Agency "North-West" was the previous land user at the industrial site of Portovaya CS. Once the forest land has been converted into the industrial one, the construction site of Portovaya CS adjoins forest land managed by the local Forest Area	Controls over the area adjacent to the CS industrial site, compliance with the environmental safety and fire safety requirements, avoidance of forest area littering.

Sector	Entity/representative	Scope of interaction
Land users, which areas accommodate the gas pipeline RoW	<p>"Pogranichnoye"</p> <p>The Forestry Agencies: North-West; Roshchinskiy, Ladozhskiy; which comprise the Forest Areas: Pogranichnoye, Kalininskoye, Borovskoye, Cherkasovskoye, Krasnoselskoye, Baltiyskoye, Bolshepolskoye, Luzhaiskoye, Komsomolskoye, Lindulovskoye, Pobedovskoye, Vyborgskoye, Veshchevskoye, Pionerskoye</p>	Acknowledgement of land plot rehabilitation designs along the gas pipeline RoW, control of compliance with the environmental and fire safety regulations.
Mass media	<p>Regional mass media:</p> <ul style="list-style-type: none"> — <i>The Sankt-Peterburgskiyе Vedomosti</i> newspaper, — “<i>Expert Severo-Zapad</i>” magazine; — <i>The Vesti</i> newspaper — municipal mass media: — <i>The Vyborg</i> newspaper, — <i>The Vyborgskiyе Vedomosti</i> newspaper, — Nash Gorod media group of Vyborg 	Preparation of news material based on newsbreaks.
Local communities	Residents of the Town of Vyborg, the Rural Settlements of Seleznevskoye, Goncharovskoye, Kamennogorskoe, Pervomaiskoye, the Village of Bolshoy Bor, affected by Portovaya CS operations	<p>Regular meetings to consult with communities</p> <p>Distributions of information on the project at the communities’ public places, during meetings and via web and mass media</p> <p>Response and feedback to suggestions, concerns and complaints from the local communities.</p> <p>Health and safety awareness campaign as needed</p>

Sector	Entity/representative	Scope of interaction
Employees	Employees of contractor companies	Surveys Social initiatives Distribution of information among the employees of contractor companies on the corporate requirements on environment protection, industrial and fire safety, occupational health.
	Employees of the Company.	Assurance of a safe labor environment, training in health and safety regulations, environmentally safe performance of work, health awareness campaigns (Appendix 23). Response and feedback to contractors' employees suggestions and complaints (Appendix 18) Development of measures towards motivation of the personnel, a corporate culture and healthy lifestyle.
National and international nongovernmental organizations	Non-Governmental Vernadsky Ecological Foundation	Joint organization for environmental education (in the long term)
JSC "Nord Stream AG" (hereinafter- "Nord Stream")		Providing services to "Nord Stream" company related to maintenance and repair of PIGs site (pipe cleaning and inspection / intelligent pigs), as well as other technical facilities, equipment and infrastructure located within service area of "Nord Stream" and at CS "Portovaya", in accordance with Service Agreement between the Company and "Nord Stream" dated 01.06.2011. Joint management of grievances and social initiatives during construction and operation of LNG complex.

3.3 Public information and sponsorship. Scheduled information disclosure actions

Company activity on information disclosure is performed in strict compliance with existing legislation of the Russian Federation, IFC PS 1 and the Gazprom PC Concept of Information Policy approved by Gazprom PC Management Board.

Coordination of activities on preparation of Gazprom PC news materials in mass media is the responsibility of Information Policy Department.

Disclosure of Company news material to mass media is performed in compliance with internal regulatory documents after approval of Information Policy Department.

The Company has vast experiences in cooperation with regional and local mass media, where the Company's production problems and achievements as well as charitable activities are discussed.

Information on Company's activities is disclosed via the following mass media:

- 1) Social and political publications:
 - newspapers: *The Izvestia-Saint-Petersburg*, *The Kommersant in Saint-Petersburg*, *The Sankt-Peterburgskiy Vedomosti*, *The Vesti*, etc.;
 - magazines: *The Ekspert Severo-Zapad*, *The Russian Metsenat*, *The Business*, etc.;
 - corporate publications – *The Gazprom* magazine.
- 2) Industry-specific mass media:
 - magazines: *The Gazinform*, *The Gazovaya Promyshlennost*, *The Technical Inspection*;
 - TV channels: GTRK Sankt-Peterburg, Fifth Channel, Telechannel Sankt-Peterburg;
 - corporate newspapers of the Company – *The ZA GAZ!*, The Social Support Fund "Lentransgaz Veterans";
- 3) the Company's site: <http://www.spb-tr.gazprom.ru/>

Every year, the PRMMSD develops the Public Consultations and Information Disclosure Action Plan (PCIDP) for the Project.

PCIDP for year 2016 is provided in Table 15.2.

Table 15.2.

PCIDP at Project operation for year 2016.

Date/Month	Action	Entity in charge
Once in three months (once a	Phone conversations with the head of Bolshoy Bor settlement to discuss	Public Relations and Mass Media Service Department

month in summer season)	current issues	(PRMMSD)
As necessary	Meetings with Head of Bolshoy Bor Settlement to inform local community on current project status	PRMMSD
Every three months	Delivery and distribution of <i>The Za Gaz!</i> Corporate newspaper in a store at the Bolshoy Bor Settlement	PRMMSD
As necessary	Updating information on Project activities at the information board in Bolshoy Bor settlement. Providing information about CS "Portovaya" operation, contact details of employees in charge, to whom people from Bolshoy Bor can apply in case of need related to Project activity.	PRMMSD (together with Prospective Development dpt. (PDD) and Branch "Portovoe")
As necessary	Publication of mass media articles concerning the activities of the Company, compliance with environmental regulations and principles during the operations. Placement of the same at the information board in Bolshoy Bor settlement	PRMMSD (together with PDD)
Single action	Replacement of grievances and suggestions box in Bolshoy Bor settlement – the new separate Company's box to be provided.	PRMMSD
Once a month	Checking of grievances and suggestions box by the person in charge from Portovoe Branch.	Portovoe Branch
As needed	Response actions to the grievances and /or suggestions received. Maintaining of grievances/suggestions register.	PRMMSD (together with Perspective Development Dpt. and Portovoe Branch)
June 2016	Performing volunteer clean-up campaign in Bolshoy Bor settlement.	PRMMSD (together with Perspective Development Dpt. and Portovoe Branch)

3.4 Resources and responsibilities

The Company's tool to achieve the above information policy goals of Gazprom PC is PR and MM service department (PRMMSD) structurally subordinated to Company General Director.

The PRMMSD Regulations were approved and put into effect by General Director Decree No. 544 dated 26.10.2012.

The duties of this Department include the following:

- development of external and internal policy concept of the Company concerning public relations;
- development of actions plans on implementation of Company’s information policy strategy;
- providing information support to the Company’s Management;
- distribution of information on the Company’s activities;
- public opinion surveys on key factors affecting the Company’s image;
- developing a concept and issuing a corporate publications and other news material on the Company’s activities;
- development, support and continuous update of Company’s official web-site;
- preparation of reports in response to official inquiries from the Company’s structural subdivision, as well as external mass media sources concerning social and economic activities.

In order to accomplish the «Organization of Company Charity Activity” task, the PRMMSD is performing the following functions:

- collecting incoming requests for charity support to be reviewed by the Company Management;
- preparing official responses to incoming correspondence on charity support;
- preparing estimate budget on charity activities for the Company Branches, requesting and analyzing the reporting documentation;
- preparation of reporting documentation on Company Charity activities.

The PRMMSD provides assistance and support to journalists in preparation of news reports (arranging visits, information support, interviews with the Company Management), analytical materials (supply of data, explanation of special and technical terms).

3.5 Grievances and requests management procedure

The objective of grievances and requests management is to record and respond adequately to complaints and requests from stakeholders, including the local communities.

There is a post box in Bolshoy Bor settlement to collect grievances and suggestions from local people. This box is checked once a month by an appointed person in charge from the Company Branch. The box in Bolshoy Bor settlement is located in the shop next to the information board. The box has the Company logo, thus, preventing the appearance of cases related to Nord Stream company activity in it.

Moreover, all grievances, comments and suggestions are collected by the settlement head, who is further forwarding this information to Company’s PR and MMS Department during

scheduled phone calls made by the officer of PR and MMS Department, or at the time of personal meeting.

The memo of conversation is made following the conversations with the settlement head, and signed by both parties.

The PRMMS Department keeps the register of applications/grievances from stakeholders . The information about grievance received is entered into this register by the responsible officer of PRMMS Department.

The person who made an application/complaint is informed by PRMMS Department that his/her application/complaint is registered (within 30 days).

The time for review of a complaint may take up to 90 days (depends on a complexity of an issue). At the end of the above set term, the applicant is informed by PRMMS Department about actions undertaken by the Company. In case an issue was not sorted out due to the objective causes, the PRMMS Department informs an applicant about the reasons preventing from satisfying such application/complaint. The time for satisfaction of complaint/application could be extended until the circumstances appear allowing the actions necessary to solve the issue. The applicant should be informed about such extension accordingly.

As soon as application/complaint is satisfied, it is considered closed, and note on issue closure is made in the log (register) of applications in the PRMMS Department.

In case the issue can not be solved by the Company’s resources, the applicant can search the third party expert consultations, legal advice, if needed.

The key local communities are notified about response and opinion registering procedure as follows (Table 15.3):

Table 15.3.

Response and opinion Registering procedure

Stakeholders	Ways of informing about Response and opinion Registering procedure
Employees of "Gazprom transgaz Saint-Petersburg" LLC	Notification via newsletters, distribution via e-mail
Employees of contractor companies performing work for the Project	Notification via information boards, briefings, newsletters
Residents of Vyborg town, the Rural Settlements of Seleznevskoye, Goncharovskoye, Pervomaiskoye, the Bolshoy Bor Settlement , summer residents	posting of information at the Internet site There is information about "Gazprom transgaz Saint-Petersburg" LLC on the information board in Bolshoy Bor settlement: — posters with actual data (on seasonal diseases, ticks

Stakeholders	Ways of informing about Response and opinion Registering procedure
	activity periods, safety precautions within industrial facility zone and etc.); - booklets about CS "Portovaya", Company's industrial and environmental activities; - corporate newspaper "ZA GAZ! "; - photo reports about volunteer clean-up campaigns and other events; - organization of meetings.

Contacts with the residents of settlements, located in the area of potential impact from the project, are performed via Administrations Heads of these residential areas.

Responses and requests at operation stage of the Project are received in the following ways:

Head office of «Gazprom transgaz Saint-Petersburg" LLC:

- using contact phone of the PRMMS Department at the office of "Gazprom transgaz Saint-Petersburg" LLC: phone: (812) 455-12-00, (812) 455-10-32, e-mail: ltg@spb.ltg.gazprom.ru

- sending e-mail to: ltg@spb.ltg.gazprom.ru or via a web-site <http://www.spb-tr.gazprom.ru/>

- using collection box for grievances and suggestions, placed in the store of Bolshoy Bor Settlement , which is checked once a month by the person in charge from Portovoe Branch.

A PRMMSD specialist ensures continuous interaction with and feedback from local communities. Some examples of arrangements used for this purpose are provided below:

- persons responsible for dealing with the local communities are appointed: a PRMMS Department officer from the Management Department, and a specialist from Portovoe Branch;

- there is a possibility for local people to communicate with Company representatives – by meeting with person in charge (when needed), phone conversations (once in three months, and once a month during summer season); local communities' complaints and requests are registered in the logs;

- contact phone numbers of Company representatives, and time, when a communication with the local communities can take place, is published at the information board in the store at Bolshoy Bor Settlement ;

- a special box for local community to drop their grievances and suggestions at any time, is located in Bolshoy Bor store and at the entrance to administration building of Portovoye LPMMP branch at: 44 Leningradskoye Highway, Vyborg, Leningrad Region, 188800.

The Company's unified registration log of grievances and suggestions from local community, where the following entries are provided: sequential number, date, full name and contacts of the applicant, if not anonymous, date of complaint (complaint acknowledgement), the complaint summary, the review outcome, actions to be done (if necessary), the response timing, remedial period to address the issues in a complaint, person responsible for remediation (if anything is required to be done under the complaint), is kept at the Company's PRMMS Department.

An acknowledgement of receipt of a complaint/request/suggestion should be sent to a complainant within 30 days of the receipt.

A 90-day period is set to review a complaint, starting from the date of receipt.

The management of complete process of collecting and handling the complaints and opinions, is the responsibility of Company's PRMMS Department, and PPD is involved by PRMSD, if needed.

3.6 Monitoring and reporting

As part of the process of continuous interactions with stakeholders, the Company prepares the following reporting that is available upon request:

- A quarterly newsletter with results based on reporting received by the Company from contractor companies.
- Regular social and environmental reporting.
- Copy of review data on requests received, with indication of the actions undertaken within a specific period.
- Description of results of interactions with stakeholders for a specific period – minutes of meetings with local communities.

The data on PCIDP results may be received by sending a corresponding inquiry addressed to PRMMSSD Chief Officer, phone: (812) 455-12-00, (812) 455-10-32, e-mail: ltg@spb.ltg.gazprom.ru

- Monitoring of social activity key performance indicators (KPI) is performed based on the following parameters (please refer to Appendix 25):

- Number of consultations by type (meetings, phone calls, correspondence, investigations and etc.) for each type of stakeholders.
- Number of males/females participating in the consultations.
- Number of grievances received by type and source.
- % of grievances resolved within set terms.

Reporting on key performance indicators (KPI) achievements for 2016 is given in Table 15.4.

Table 15.4.

Social KPI achievements for 2016

KPI name	Indicator value for CS Portovaya, 2016
Number of consultations for each type of stakeholders: total, psc. Including:	832
- interaction with the Government of Leningrad region: Submitting data on waste to the Committee on housing and utilities service and transport of Leningrad region –3 rd and 4 th quarters. Every three months: Submitting information to the Territorial office of Rospotrebnadzor Management for Leningrad Region in Vyborgsky district about results of quality monitoring of waste waters and natural water.	8
-interactions with municipal entities;	0
- interaction with supervisory authorities: Obtaining the Expert and sanitary-hygienic conclusions of Rospotrebnadzor on draft MPE for the RoW of North-European gas pipeline (2 conclusions); Obtaining the emission limits and permits for RoW of North-European gas pipeline (2 documents); Providing settlement payment for negative impact on environment – quarterly; Submitting statistic reports to Vyborgsky district office for National statistics – once a year; Submitting to the Neva-Ladoga Water Basin the statistic reports №2-TP (water) – once a year, and data on water use -quarterly. Submitting statistic reports №2-TP (waste) and technical report on waste handling – once a year.	10
- interaction with Gazprom PC;	1
- interaction with land users;	4

KPI name	Indicator value for CS Portovaya, 2016
- interaction with mass media: 1 press-release	1
- regular meetings with local residents:	4
- interaction with contractors: induction briefings	763
- interaction with employees: induction briefings -25 , environment protection technical training - 12	37
- interaction with nongovernmental organizations;	0
- interaction with Nord Stream project .	4
Number of females/males participating in consultations - among Portovoye LPMMP branch employees - among of Bolshoy Bor residents	2/5 5/3
Number of grievances received, by type and source - verbal - written	2 0
% of grievances settled within agreed terms - verbal	100
Number of organized social events	6

Appendix № 32-03-06-01-16

Cultural heritage impact management plan

1 Purpose and objectives

The purpose of Cultural Heritage Impact Management Plan is to develop the plan of actions aimed to provide the protection and integrity of cultural heritage objects revealed in the process of Project implementation.

2 Statutory and other requirements

The Cultural Heritage Impact Management Plan has been developed in compliance with IFC Performance Standard 8 – Cultural Heritage.

In case it has been found in the course of risk and impact assessment that there is an opportunity of affecting the cultural heritage properties, then the Company shall provide for engagement of competent professionals to identify and protect the cultural heritage.

During environmental and social risks and impacts assessment it is necessary to define whether there is a chance that territory proposed for the Project implementation involves the locations where cultural heritage items could be found during construction stage or operation of project facilities. In these cases the Company is required to develop the provisions on Chance find handling as part of ESMS by preparing a chance find handling procedure to be applied in case a cultural heritage item is found.

Company can not perform any actions in relation to such chance finds until expertise is performed by competent specialists and the necessary measures are defined.

3 Cultural heritage items management procedure

3.1 General information

The Cultural Heritage property protection in Russian Federation is regulated by Federal Law # 73-FZ “On Cultural Heritage items (historical and cultural property) of Russian Federation nations” dated 25.06.2002.

According to article 3 of this law, the cultural heritage (historical and cultural property) of Russian Federation nations includes the real estate (including archeological heritage property) and other items with historically related to them territories, artworks, sculptures, decorative and applied arts, science and technology, and other items of material culture, appeared as a result of historical events, and valuable from the point of history, archeology, architecture, urban development, art, science and technology, esthetics, ethnology or anthropology, and social culture.

The archeological heritage items are the traces of human existence in the past ages partially or completely hidden below ground or water (including all items and cultural layers related to such archeological traces), where main or one of the main sources of information about them are the archeological excavations or findings. The Archeological heritage includes ancient settlements, barrows, burial grounds, ancient entombments, encampments, stone statues, stelas, rock carvings, remains of ancient fortifications, manufacturing places, channels, vessels, roads, sites of ancient religious ceremonies, and cultural layers related to the property of archeological heritage.

The Company performs the operation of Project industrial facilities and is not responsible for the choice of site for the construction of such facilities. The organization that performs the construction (OOO “Gazprom Invest”) prior to start the construction activities had developed the project documentation, including survey of land plot allocated for the construction. Based on examination of project documentation it was established that there are no cultural heritage property at the territory under consideration.

Until now at the territory of Project location and functioning, there are no records of cultural heritage items included in the state register of cultural heritage property that were undocumented at the construction stage. However, it is known that settlements, ancient camps, culture and household properties of ancient people resided in the area could be found at the territory of Leningrad region.

The cultural heritage items can be revealed by Company during capital repairs of main gas pipelines. Prior to start capital repairs the project documentation is worked out, and availability of cultural heritage property is established, based on the results of state and / or departmental examination of this documentation.

According to IFC PS 8 i.8 the Company is required to develop a procedure of Chance Find handling – cultural heritage items that were not identified earlier.

The works on identification and state recording of items that have cultural heritage signs are organized by regional and municipal bodies of cultural heritage protection (article 16 of Federal Law “On Cultural Heritage items (historical and cultural property) of Russian Federation nations).

The procedure of identification and state registration of items that have cultural heritage signs is established by federal body of cultural heritage protection.

3.2 Identification of Cultural Heritage Properties and handling procedure

The Chief Engineer of the Branch is the person in charge of the Cultural Heritage Impact Management Procedure.

Upon identification of an object possessing features of archeological and cultural heritage property (finding), the following course of actions shall be undertaken:

1) The contractor (Company's employee or contracting company's employee), who discovered the finding in the course of works on the Project, is required to:

Suspend immediately the work in progress. No further construction or other works shall occur until an appropriate course of action is undertaken as described below;

– Inform immediately the manager of work [foreman/ shift manager/ head of department] about the finding, who in turn shall inform the Chief Engineer of the Branch accordingly;

No work shall be carried out at the facilities without a permit from the Chief Engineer of the Branch, neither by Branch's employees nor the contractors. The person in charge shall be accessible by phone at any time to receive information on chance find of archeological and cultural heritage property and implementation of protection and salvage actions.

2) The Chief Engineer of the Branch on the territory, where the finding is located, is required to report the finding (within 72 hours) to the regional agency authorized for protection of cultural heritage properties – Department for Protection, Preservation, and Use of Cultural Heritage Properties of the Committee on Culture of Leningrad Region (hereinafter referred as Department).

Department contacts: Legal address: 198097, Saint Petersburg, ul. Trefoleva, d. 34. Phone +7 (812) 747-11-05. E-mail: kult_lo@lenreg.ru.

In case the finding is of substantial interest, the Chief Engineer of the Branch reports it to the Chief Engineer of the Company, who makes a decision regarding persons in the top management responsible for interactions with governmental agencies in control of cultural heritage objects protection.

3) The Department submits to the federal body in control of cultural heritage objects' protection (Federal Surveillance Service for Compliance with the Law in Mass Communications and Cultural Heritage Protection, hereinafter referred as Rosokhrankultura) a report on including the finding in the state register of cultural heritage. Information in regard to the object location (its address or, if absent, description of the object's location) and its historic and cultural value shall be attached to the report.

Rosokhrankultura contacts: 109074, Moscow, Kitaygorodskiy pr., d. 7, str. 2, of. 102. Phone +7 (495) 628-3872.

4) Rosokhrankultura makes arrangements to establish a historic and cultural value of the finding (historic and cultural expertise), with the involvement of specialists in the sphere of cultural heritage protection (within 90 work days).

In case an archaeological heritage object was found within the borders of land plot or water area, the owner/user of such land plot or water area, starting from the day of finding, is required to comply with conditions stated by the Federal law “On Cultural Heritage (historical and cultural property) of Russian Federation nations” to provide protection of this cultural heritage finding.

Archaeological heritage properties, as well as all archaeological items at the surface, below ground or under water, are publicly owned.

5) Upon completion of works on establishing historic and cultural value of the finding, Rosokhrankultura decides whether to include this object into the state register of cultural heritage property or to refuse this object to be included into this register.

The cultural heritage finding remains under state protection until the decision is taken whether it should be registered or not included in the state register.

6) Within three work days after decision is made, the Rosokhrankultura informs the Department of a decision, with a copy of such decision attached.

Objects of cultural heritage included in the register shall further remain under governmental protection with the aim to prevent their damage, destruction or destroying, changes in exterior and interior, as well as to protect them against environmental hazards and any other negative impacts.

The Branch, on the territory of which the finding is located, shall perform the following as part of presented action procedure:

Maintain direct contacts with the governmental supervisory authorities in charge of archeological and cultural heritage;

Keep records of all Chance Finds;

Control the documentation related to the activities on archeological and cultural heritage sites handling (expert opinions, archeological excavations reports, and etc.);

Control interactions between a special company responsible for protection and salvage actions for archeological and cultural heritage properties and the contractor companies;

Control the contractor companies’ compliance with the requirements of existing legislation, this Plan, orders of supervisory authorities.

3.3 Investigation, Protection and Salvage Procedure

According to the recommendations determined in the state expert report on the establishment of historic and cultural value of the finding, the Company shall sign the contract with a specialized company to carry out protection and salvage actions for the identified archeological and cultural heritage properties. Based on the results of the actions undertaken, a report shall be made by the specialist company, which is submitted to the Company and the governmental authority.

The investigation, protection and salvage procedure includes the following actions (according to Federal law “On Cultural Heritage items (historical and cultural property) of Russian Federation nations”):

1) Issue of an assignment for works on preservation of the cultural heritage object and permission for works on preservation of the cultural heritage object, by the Governmental authority for cultural heritage protection.

Works on preservation of the cultural heritage object shall be carried out only as stated by the order of the respective authority for governmental protection of cultural heritage property.

Field salvage archaeological works are only permitted when permissions in due form issued by authorities for governmental protection of cultural heritage property are present.

2) Determination of the registered culture heritage object to be protected, and area boundaries of such an object.

3) Installation of information signs and labels at culture heritage sites.

4) Establishment of restrictions (encumbrances) of the ownership or other proprietary rights to an object of cultural heritage by the requirements in respect to the cultural heritage object.

5) Establishment of responsibility for damage, destruction or destroying of culture heritage object, illegal movement of culture heritage object, infliction of harm to culture heritage object, and undertaking actions resulting in changes to the culture heritage object under protection.

6) Working-out, approval and confirmation of proposed protection areas of culture heritage objects, as well as approval of decisions of Federal executive authorities, executive authorities of the subjects of the Russian Federation, and local authorities regarding land allocations and changes in their legal status.

7) Establishing requirements to the activities within boundaries of the area of interest, requirements to town-planning regulations within boundaries of the area of interest; establishing special mode of land plot use, within the boundaries of which the archaeological heritage object is located.

8) Approval of project documentation needed to perform works on culture heritage object

preservation.

9) Approval of report documentation on implementation of works on preservation of culture heritage object.

10) Once in five years the survey and photo recording of condition of culture heritage objects included into the register to determine the required preservation activities.

Based on recommendations stated in the report on protection and salvage actions undertaken, the Branch prepares and forwards the appropriate instructions to the contractor companies on protection of the archeological and cultural heritage properties in the course of work execution.

3.4 Procedure for handling movable finds

In case some reproducible¹⁴ tangible objects of cultural heritage – movable finds are found at the territory of Project activity, the Company shall act in accordance with the following principles:

1) Carry out protection and salvage (rehabilitative) measures providing preservation of value and functional properties of the cultural heritage object, on site where the object is located (was found), without movement of the object.

2) In case the movement of the movable find can not be avoided, it is necessary to take all possible measures to minimize the impact to the object when moving it, and perform the remedial works at some other place.

3) Irreversible movement of historical and archaeological artifacts and structures shall be implemented in accordance with principles stated in IFC Performance Standard 8.

4) In case of loss of the movable find, which has been used by concerned communities for customary cultural intentions, provided there are proofs that it was impossible to avoid negative impact to the object and to restore it, the Company shall provide compensation for such a loss.

5) Procedure of movable finds handling (including their storage) is established by the state authority for cultural heritage property protection.

The Chief Engineer of the Branch is responsible for the implementation of this procedure.

¹⁴ Reproducible cultural heritage is defined as tangible objects of cultural heritage which in themselves can be moved to some other place or be replaced with identical structure, or natural sites to where the cultural values can be transferred in an appropriate way. Archaeological or historical objects can be considered as reproducible when eras or cultural values presented by them can be adequately represented by other objects and/or structures.

Appendix № 32-03-06-01-17

Environment protection, Health and Safety requirements for contractor companies

1 Purposes

EHS Requirements to contractors and subcontractors have been developed in order to:

- organize authorization of seconded staff and contractors' personnel for unrestricted work at the Project facilities;
- establish unified requirements for contracting companies as refers to the readiness control procedure and authorization to work at Project facilities;
- monitor the contracting companies implementing their obligations under contractor agreements, undertaking necessary actions to prevent industrial accidents, occupational disease, ignition, emergency, fire, and incidents;
- ensure that environment protection (EP) and environmental and social management system requirements are met by contracting companies ;
- ensure quality work implementation, in accordance with design solutions and standard requirements, within established time limit.

EHS Requirements For Contracting companies should be considered in combination with other Plans of the Company:

- Waste Management Plan.
- Atmospheric Emission Management Plan.
- Water Resources Management Plan.
- Hazardous Material Management Plan.
- Industrial Environmental Monitoring Plan.
- Environmental Management Plan.
- Health, safety and public protection Plan.
- Occupational Safety Management Plan.
- Facilities Access Management Plan.
- Emergency Preparedness and Response Plan.

2 Statutory and other requirements

EHS Requirements to contractors and subcontractors have been developed in compliance with:

- Federal Law No. 7-FZ dated January 10, 2002 "On Environment Protection";

- Federal Law No. 89-FZ dated June 24, 1998 "On Industrial and Consumption Waste";
- Federal Law No. 96-FZ dated May 4, 1999 "On Atmospheric Air Protection";
- Federal Law No. 116-FZ dated July 21, 1997 "On Industrial Safety of Hazardous Industrial Sites";
- Federal Law No. 190-FZ dated December 29, 2004 "Building Code of the Russian Federation";
- Federal Law No. 197-FZ dated December 30, 2001 "The Labour Code of the Russian Federation";
- STO Gazprom 2-3.5-454-2010 Regulatory documents for design, construction and operation of PC “Gazprom” facilities. Main gas pipelines operating regulations;
- STO Gazprom 2-2.2-382-2009 Regulatory documents for design, construction and operation of “Gazprom” PC facilities. Main gas pipelines. Rules for execution and acceptance of works at construction of onshore gas pipeline sections, including conditions of far north;
- STO Gazprom 2-1.16-224-2008 Regulations on arrangement and implementation of control to ensure reliable, safe and effective operation of "Gazprom" PC power assets;
- STO Gazprom 2-3.5-032-2005 Regulations on arrangement and implementation of control to ensure the compliance with industrial safety requirements and operating capability of facilities in the “Gazprom” PC unified gas supply system;
- STO Gazprom 2-1.19-275-2008 The environment protection at “Gazprom” PC facilities. The Industrial Environmental Control. General requirements;
- STO Gazprom 2-3.5-046-2006 Regulatory documents for design, construction and operation of “Gazprom” PC facilities. Procedure of Expert Examination of technical specifications for equipment and material, processes certification, and evaluation of companies’ preparedness for diagnostics and repair of "Gazprom" PC gas transportation facilities;
- STO Gazprom transgaz Saint-Petersburg 13-03-02-2015 Regulatory documents for design, construction and operation of the facilities. The authorization of the seconded staff and contracting companies to perform works in the branches;
- STO Gazprom 18000.1-002-2014 Uniform Management System of Occupational Health and Industrial Safety in ”Gazprom” PC. Identification of Hazards and Risk Management;
- General EHS Guidelines;
- IFC PS 1 "Environmental and Social Risks and Impacts Assessment and Management";

- IFC PS 2 "Personnel and Working Conditions".

The purpose of applying IFC PS 1 to the Project is to appoint staff in charge of environmental and social impacts of the Project operation, with necessary knowledge, qualification and experience.

The purpose of applying IFC PS 2 to the Project is to provide an appropriate, principally safe working conditions, as per requirements of Labour Code of Russian Federation and international standards.

3 Requirements for contracting companies

3.1. Contract organizations authorization for unrestricted work

An operation certificate authorizes the contractor workers to access the facility.

In order to comply with EHS Requirements, and obtain authorization for unrestricted work at the Project facilities, and get a work permit, the contracting company representatives are required to provide the following:

- documents in accordance with the list provided in Table 17.1;
- qualification certificates confirming authorization to perform special work operations, where additional safety requirements are applicable.

Table 17.1.

The list of permits and approvals to be provided by the contracting companies to obtain access to the Company facilities

No	Document name
	Documentation to be provided to the Company
1	Company certificate. Profile: General information, company details; Workforce Technical resources Experience Construction control organization References and feedback on completed works
2	A copy of a contract, an amendment agreement with contract price calculation and an operation schedule attached to it.

No	Document name
3	A copy of an appraisal statement of company operational readiness for capital construction and reconstruction of gas transport facilities of the “Gazprom” PC in compliance with STO Gazprom 2-3.5-046-2006
4	A copy of an expert statement of the company operational readiness for technical maintenance and repair of unified gas pipeline system (UGPS) facilities of “Gazprom” PC (issued by subsidiary OJSC “Centrenergogaz” of “Gazprom” PC)
5	A copy of an expert statement of company operational readiness for capital repair of gas transport facilities of “Gazprom” PC (issued by LLC “Gazprom Gaznadzor”)
6	A copy of certificate of authorization for certain type(s) of work, which impact safety of capital construction facilities (issued by SRO)
7	A copy of certificate accrediting activity related to repair and setup of power utilities equipment of subsidiaries and organizations of “Gazprom” PC, issued by the Energy Management of “Gazprom” PC
8	List of companies participating in the work (the general contracting company and subcontracting companies)
9	Cost estimates, working design for the construction, capital repair with a certified conclusion of industrial safety evaluation as per requirements of Article 8, paragraph 1 of the Federal Law No. 116-FZ
10	Building organization project (BOP).
11	Work production plan (WPP) with process flow-charts for all types of works
12	Authorization of North-West Management of LLC “Gazprom Gaznadzor”
13	An operation schedule
14	A copy of order appointing the person in charge of maintaining all temporary road crossings in a good working order (in case there are road crossings).
15	Graphic material showing utility systems within operation area with the corresponding approvals and permits

No	Document name
16	A statement of utilities tie-up in-situ.
17	The implementation program of testing and commissioning operations, coordinated with the Company's branch.
18	A copy of the document confirming a company registration in the local (at the site of work performance) management of Federal Service for Environmental, Technological and Nuclear Supervision
19	A copy of Notice of work commencement to LLC "Gaznadzor".
Documentation to be provided to the branches	
1	An assignment to the branch signed by the Company's Deputy General Director designating the contracting company as the Contractor to implement the work, including its tax payer ID, OGRN (primary state registration number), and contract number;
2	<p>A licence – for foreign citizens arrived in the Russian Federation under no visa required category</p> <p>or</p> <p>Work permit – for those who arrived in the Russian Federation under visa required category</p> <p>or</p> <p>A certificate of asylum granted in the Russian Federation (for citizens of Ukraine)</p>
3	Work Production Plan (separate for each facility).
4	Actions agreed with the branch ensuring safe operation and safe-keeping of equipment and structures.
5	Environment protection program for the working period.
6	Safety knowledge assessment certificates of the staff (workers) of the contracting (third-party) company.
7	Copies of industrial safety certificates for managers and specialists, copies of safety requirements knowledge assessment protocols for managers, specialists

No	Document name
	and workers.
8	A copy of order appointing the executor (s) with a list of persons working at the facility and appointment of person in charge of safe working conditions during work execution.
9	A copy of approved work permit for high hazard operations (if necessary).
10	During the work in heat power installations – qualification certificate confirming knowledge assessment
11	A copy of welder qualification certificates
12	Documents confirming that work permit is issued for operations where additional safety requirements apply (hot, gas-hazardous, earthmoving)
13	Certificates of foreign citizens registration in the territory of the Russian Federation issued by the Office of the Federal Migration Service
14	The license for subsurface use during construction
15	Copies of water use contracts for withdrawal of water resources from surface water bodies and, if necessary, a copy of solution on use of offshore area for work activity
16	A copy of resolution granting permission to use water body for discharge of waste wastes after hydraulic testing (in compliance with amounts and point of intake, defined by project documentation)
17	Waste generation and disposal limits
18	Copy of contracts with organizations implementing transportation, disposal, utilization, neutralization and processing of wastes accumulated during work activity, with valid licenses for specified types of activity attached. The licenses should specify the wastes generated during work activity. A copy of training certificate of a person in charge of environment safety.
19	A list and a sketch-map of container locations for waste accumulation during works, with indication of wastes removal frequency, and a company transporting wastes to landfill area.
20	Copies of certificates of persons trained in “Provision of environmental safety

No	Document name
	by the managers and specialists of environmental departments and environmental monitoring systems” and “Waste management”
21	Copies of orders appointing persons in charge of environment protection and waste management
22	A copy of industrial environmental control guidelines
23	Industrial environmental control instruction
24	Production and consumption waste management instruction
25	Schedule of industrial environmental control
26	Information of measures providing integrity of cultural heritage objects in the area of work activity
27	Technical Regulation of construction waste management (if the object is located within boundaries of Saint-Petersburg)
28	Documents confirming compliance of machinery with environmental standards
29	Copies of records of fire safety basic training provided, for all employees
30	A copy of order from a contractor appointing person responsible for QC
31	An order appointing supervisor responsible for work operations
32	Certificate of general contracting organization(s) for each facility
33	Certificate of diagnostic general contracting organization(s) for each facility

After submission of required documents, the employees of contracting company undergoing the induction and fire safety briefing at workspace in the Portovoye, Severnoye, Volkhovskoye branches, performed by safety engineer (or by person appointed by branch order) and environment protection briefing, performed by branch EP engineer, with respective entry in the log of induction briefing.

The acts of delineation of operational responsibility and work permits are required in advance (before start of works) in case it is necessary for the contracting company to be

connected to heating, air, water, sewage, and other networks.

The contracting company is required to present an order, appointing person in charge of safe and failure-free operation of above networks, as well as maintenance staff IDs with a valid authorization to operate and maintain above networks.

Prior to start the construction and installation works at Project facilities, all the necessary actions, needed to ensure the safety of operations at designated site, are performed by the departments of respective branch:

- determination of areas with permanent industrial safety hazards;
- measures to reduce the impact from industrial safety hazard;
- placing the required safety signs ;
- arranging locations for waste accumulation, traffic routes, vehicle parking and washing sites.

When these actions are complete, the contracting company and branch management issue a access certificate for delivery-acceptance of designated area of work.

After signing of above certificate, all measures to ensure work safety are assigned to the person in charge of work execution, appointed by the contracting (third-party) company.

In case there is no delineation of operational responsibilities, a work permit for high hazard operations is issued, as appropriate. The work permit is issued by the Chief Officer of the branch department responsible for the facility in operation, and facility is prepared by the personnel of respective department. The works supervisor (responsible for the work execution) can be manager or specialist of contracting company, or the branch (provided that order on subordination of contracting company employees is available), who has permit to perform these works.

The branch security service issues the temporary passes for motor vehicles and other automotive equipment of the contracting company, following order of branch manager:

- based on name list with authorizations of safety and environmental protection specialists confirming the completion of induction briefing;
- based on written request from contractor, with authorization of person who controls the contractor activities, the temporary passes for motor vehicles and other automotive equipment are issued.

At entrance to and exit from the territory of Project facilities, the personel of contracting company is required to present a temporary pass and identity document (passport). It is prohibited for personnel, vehicles and other automotive equipment of the contractor to access the territory of Project facilities without above documents.

In order to avoid misunderstanding and conflicts, when contractor is transporting or carrying goods from the territory of the Project facilities, the respective material pass-tickets should be issued, and all the goods entering the branch territory (vehicles, mechanisms, tools, appliances, workwear and other PPEs, materials, and etc.) must be documented in the security desk log.

In case of violations revealed, the person in charge of Project facilities can issue a written instruction to the contractor representative in charge, to undertake the remedial actions. In case such instruction is neglected, or there is a major violation of requirements of occupational health and safety, fire, industrial safety and environment protection rules and standards, the person in charge is entitled to suspend the performance of work, with written notice to the management of Company branch and contracting company, until such violation is remedied.

Based on notification from Branch management, the Company management has right to terminate the contractor agreement.

In case the security personnel (North-West interregional security office of PC "Gazporm" in St.Petersburg) providing security of industrial facilities of the branches, spot the contractor workers at site intoxicated by alcohol or drugs, the person in charge of working activities in the branch (Chief Engineer) is required to suspend them from work as per regulations of current legislation, issue the corresponding report, withdraw the temporary passes and expel these workers from the branch territory. The branch management notifies immediately the Company representative in charge and contracting company, for immediate investigation, corrective actions and prevention of such violations.

Prior to signing the certificate of completed works, the contractor is required to submit an as-built documentation to branch representative, including compliance certificates and material safety data sheets of applied raw stuff and materials, compliance certificates, data sheets and operating instructions for installed machinery, mechanisms, equipment, testing documentation, and other documents, as required by contract.

3.2 Contractor obligations

A Contract is signed with the contracting company in accordance with Contractual Work Regulations of the Company. The contracting company is entitled to involve third parties, or subcontractors to complete its obligations under the agreement. In order to ensure compliance with these requirements by all contractors working for Company, the respective conditions are included in the contractor agreements.

The contractor is required:

- meet the requirements of Russian Federation legislation regarding environment protection;
- meet the requirements of regulatory documents and technical standards establishing rules of work implementation at hazardous industrial facility and emergency or accident response procedure at hazardous industrial facility in accordance with the requirements of Federal Law No. 116-FZ;
- comply with IFC PS requirements and allow audits of contractors by personnel of Company and its branches;
- undertake obligations under Company Policy regarding quality, environment protection, occupational health and industrial safety;
- comply with environmental, sanitary and other requirements set by the Russian Federation Law for environment and human health protection in industrial and consumer waste management, according to the Federal Law No. 89 – FZ;
- perform industrial environmental control in accordance with Federal Law No. 7 – FZ and STO Gazprom 2 – 1.19 – 275;
- perform environment protection activities using own resources, develop environment protection regulations, and cooperate with State supervisory authorities;
- in case the contractor has no environment standards, approved by state ecological control agency, and no Permits for polluting emission limits to atmospheric air, waste disposal limits, and waste water discharge, the estimate of payment for negative impact is calculated as charge for pollution in excess of the established limits, with subsequent transfer of fee amount to the local office of Rosprirodnadzor, and copies of payment calculation and payment orders are submitted to the branch, where works are performed.
- create and implement by own resources, the program of environmental protection measures and sustainable use of nature resources, in accordance with design solutions specified for the works to be implemented; following Company’s requirement, provide a report on implementation of measures to the branch;
- refrain from use of materials and equipment provided by the Company or execute the instructions, if this can lead to a breach of environment protection requirements mandatory for the parties;
- the contractor becomes the owner of waste generated during designated operations starting from the moment of such wastes generation, and signs agreements for waste removal

and final disposal with the licensed agencies on his own, and on Company's request, provides to the Branch documents confirming waste removal.

- to use personal and collective protective equipment, and comply with work and rest schedule for workers according to the requirements of Labour Code Article 212;
- to implement any works and actions needed in the protection zones of Hazardous Industrial Facility (HIF), except for emergency and repair and recovery operations;
- comply with fire safety requirements during work implementation according to the requirements of RF Fire Safety Rules;
 - in case a violation of OH&IS rules and regulations is revealed, the contracting company workers must take measures to correct them independently, and immediately notify the contracting company management and branch officer in charge of facilities, where the operations are implemented, in order to undertake the corrective measures as per Federal Law No. 116-FZ;
 - in case a risk to health and safety of workers occurs, persons in charge are required to stop works and take measures to eliminate hazard, and, if necessary, arrange evacuation of people to a safe place as per requirements of Article 214 of the Labour Code;
 - the contractor companies, subject to Article 16 of the Federal Law No. 7-FZ, perform payments for the negative impact to the environment, on their own, and submit data on such payments to the branch, as part of industrial environmental control.

3.3 The obligations of branches

As part of interaction with the contracting companies, the branch is required:

- meet the requirements of Russian Federation regulatory documents and technical standards in the area of industrial safety;
- issue work permits to operate at the HIF for workers, who satisfy the corresponding qualification requirements and have no medical contraindications related to specified work, as confirmed by a medical certificate issued as per requirements of Article 9 Of the Federal Law No. 116-FZ and Article 213 of the Labour Code;
- have in place the regulatory documents and technical standards for HIF establishing the procedures of work operations at HIF;
- arrange and implement the industrial control of compliance with occupational health, industrial, fire, and environmental safety requirements, and labour day routine set for contractor companies, when performing works in the area of branch responsibility, as per requirements of Article 11 of the Federal Law No. 116-FZ;

- implement construction control over building quality by supervisors and professional staff authorized for technical supervision, on condition of direct subordination to the branch manager or deputy branch managers, or on contractual basis with the agencies licensed for this kind of activity as per Article 53 of the Building Code;
- perform induction and fire safety briefing to the contractor workers;
- during high hazard operations at the facilities:
 - to certify the contractor’s work permits for hot and gas-hazardous work, and for operations in electric power installations;
 - as part of the induction briefing, to stress and notify the seconded personnel and contracting companies about areas hazardous for people, where industrial hazards are constant or may be present, either in connection with or without connection with the type of works implemented.
- provide an induction briefing at workspace to contractor personnel designated for operations in the electric power installations, as well as a briefing on the power supply schematic diagram of electric installation to the workers authorized to issue work permits, and exercise duties of supervisor in charge and field engineer;
- notify personnel of contractor companies about hazards and risks related to occupational health and safety, and measures to reduce them;
- arrange safety fencing at the borders of the areas of constant industrial hazards, and warning fencing and safety signs in the area of potential industrial hazards.
- Set up and implement the industrial environmental control to ensure that the requirements of environment protection law are met by the contracting companies during operation in the area of branch responsibility, with the purpose to ensure the implementation of environmental protection measures and sustainable use and recovery of natural resources during operation and other activities as per Article 4 of STO Gazprom 2-1.19-275 and Article 67 of the Federal Law No.7-FZ;
- monitor the state of sanitary protection area and access roadways to operation facilities, and the reinstatement of disturbed and polluted lands performed by contracting company in accordance with the requirements of Article 13, paragraph 1 of the Land Code and Article 46, paragraph 2 of the Federal Law No. 7-FZ;
- provide induction briefing on environment protection to the contracting company staff with records in the trainer’s and the trainee’s logs;
- inform the contractor companies staff about requirements of environmental policy of the "Gazprom" PC and the Company;

- inform the contractor companies staff about environmental impacts and significant environmental impacts of the Company and ways to manage them to minimize negative impacts on the environment; reveal significant environmental impacts of the contractor companies and require to develop and implement measures to manage such impacts.

3.4 Responsibility

The contractor bears responsibility for due fulfillment of the requirement as an employer of the facility personnel. During implementation of some works under a subcontract, Subcontractor is responsible for EHS Requirements fulfillment, while Contractor is assigned to control proper performance of all applicable requirements by the subcontractor.

The contractor's responsibilities include the creation, provision to the Company for approval and implementation of a EHS Plan. Also, the contractor provides for the corresponding types of operation implemented under the subcontractor agreements to be included in the Plan.

Those responsible for violation of RF statutory and other regulatory acts bear civil, administrative and criminal responsibility.

3.5 The EHS plan

The EHS Plan reviews hazard factors and risks in the scope of work and (or) at the working sites of the contractor. The Plan sets forth the measures to maintain risks at an acceptable level. A connection to the efficient Environmental and Social Issues Management Manual must be evident in EHS Plans.

The contractors are entitled to create EHS Plans to the extent required by their organization. The Company sets the minimum requirements to the contractor EHS Plans as follows:

- the set-up of the EHS system and assignment of responsibility;
- preparedness to emergency situations, emergency response;
- a list of the main EHS documents.

3.5.1 The arrangement of contracting company EHS system, areas of responsibility

The EHS system of contracting company must include the following items:

- rate of EHS integration in the form of line management system;
- EHS information exchange procedures, maintenance procedures for the line management;
- the assignment of those responsible for the risks management implementation methods described in the risks evaluation;
- the assignment of those responsible for EHS reporting in the company;

– the management of coordination with other organizations (persons) present at the facility (such as description of interaction with other contractors, delineation and delegation of authority to Subcontractors).

3.5.2 Preparedness to emergency situations, emergency response

The EHS Plan outlines actions for containment of potential emergency situations. The contractor's obligations include coordination of its own emergency response actions with similar actions taken by the Company. Dependent on the type of work, the designated actions might include a set-up of special document on emergency cooperation in order to assign responsibilities and liabilities to the Company, the contractor and third party.

3.5.3 The list of main EHS documents

The List of Main Documents defines current documentation of contractor and Company. It is a responsibility of Company's EHS Department to analyze the contractor documents and to assess its compliance with Company requirements.

Appendix № 32-03-06-01-18

Human Resources Management Plan

1 Purpose

A purpose of this Plan is to organize the human resources management in accordance with the requirements of the national and international labor law.

2 Statutory and Other Requirements

The Human Resources Management Plan has been developed in compliance with:

- IFC Performance Standard 2 “Labour and Working Conditions”;
- Human Resources Policy of PC "Gazprom", its subsidiaries and affiliates (hereinafter referred to as the Human resources policy);
- Trade Union Agreement for 2013-2018.

Basic provisions of IFC PS 2 include the following:

- Provision of fair treatment, non-discrimination and equal opportunities to employees.
- Establishing, maintaining and improving relationship between employees and management.
- Providing compliance with national employment and labor laws.
- Protection of employees, including vulnerable categories, such as children, migrant employees, employees employed by third parties, and employees in the client’s supply chain.
- Provision of safe and healthy working conditions, and protection and promotion of employees’ health.
- Avoidance of forced labor.

In compliance with IFC PS 2 basic provisions the Company is required to develop and implement human resources policy and procedures appropriate to its size and workforce, that set out its approach to labor management consistent with the requirements of national law.

The company will provide employees with documented information that is clear and understandable, regarding their rights under national labor and employment law including their rights related to hours of work, wages, overtime, compensation, and benefits after establishing the working relationship and when any material changes occur.

If the Company is a party in a Trade Union Agreement with a employees' professional association, such agreement should be respected.

3 Human Resources Policy

The Human resources policy of PC "Gazprom" is intended to create the effective mechanism of personnel management based on social partnership with the goal to support the main business activities of PC "Gazprom" and its subsidiaries and affiliates.

The Human resources policy is a system of principles and conceptual approaches to personnel management that ensures successful development of the Company and a sound balance between interests of the Company employees, shareholders, consumers and the state.

Employees are considered the major strategic resource of Company ensuring its competitiveness, and contributing largely to the Company's success in achieving its goals.

3.1 Purpose and Basic Provisions of the Human Resources Policy.

The main purpose of the Policy is to guarantee maximum efficiency from investments in human resources on the basis of:

- Reliable status of "preferable employer";
- Integrated motivation of each employee to achieve the Company's goals;
- Creation and development of objective and effective system of performance appraisal of each Company's employee.

The Human resources policy ensures unified approach to personnel management taking into account the regional specifics.

The Policy basic provisions are as follows:

- Maximum flexibility in human resources management;
- Constant improvement of human resources management on the basis of introducing human performance technology and automatic control systems;
- Rapid and effective adaptation to the changes of social, political and external economic factors;
- Human resources professionals. Building teams consisting of high quality employees who are eager to fully realize their potential through addressing technical, economic and social objectives of the Company;
- Efficiency in managing human resources;

- Ongoing planning of management process on the basis of regular assessment of human resources status;
- Transparency and openness in management of human resources;
- Succession – maintenance of positive traditions in management of human resources.

3.2 Basic directions of the Human Resources Policy

The main interconnected components of the Human resources policy include the following directions:

- Selection, assessment and use of human resources;
- Training and development;
- Motivation and reward;
- Social policy;
- Corporate communications.

4 Company actions to comply with IFC PS 2 requirements

The provisions of Performance Standard (PS) 2 have been developed, in particular, with taking into consideration the number of conventions including those of the International Labor Organization (hereinafter referred to as ILO) and the United Nations Organization (hereinafter referred to as UN). The Company operates its business activity under PS 2 in such a way that four vital Conventions of ILO on labor relations are observed.

The fundamental principles and rights of four ILO Conventions are: the effective abolition of all forms of forced and child labor, the elimination of discrimination in employment and occupation and freedom of association and the effective recognition of the right to collective bargaining. Besides some other issues such as working conditions and terms of employment, personnel reduction, grievance mechanism, living conditions of Employees and issues of occupational health and safety have been covered in PS 2.

IFC PS 2 requirements and the corresponding Company actions necessary to implement these commitments are given in table 18.1.

Table 18.1.

The Company actions necessary to comply with IFC PS2 requirements

IFC PS2 requirements	The Company actions consistent with the requirements of PS 2
<i>Working Conditions and Management of labor relations</i>	
Human Resources Policies and Procedures	Basic provisions of the current Company Policy are stipulated in item 4 of this Appendix aiming to:

IFC PS2 requirements	The Company actions consistent with the requirements of PS 2
(paragraphs 8, 9)	<p>a) create business atmosphere based on openness, mutual respect and cooperation;</p> <p>б) develop personnel motivation system to help each Employee to develop his or her career and obtain reward corresponding to his/her professional level and personal contribution to the Company business;</p> <p>в) improve social protection of Employees;</p> <p>г) provide access for Employees to vocational training and professional development;</p> <p>The Employees' rights and opportunities are formalized in national labor law, employment contract, trade union agreement and other local regulations of the Company.</p>
Working Conditions and Terms of Employment (paragraphs 10-12)	<p>All Employees employed by the Company should have an employment contract where the work relationship with the Employer or a third party are set out. The Employment contract will outline: employment conditions, wages and benefits, calculation of wage, hours of work, overtime arrangements and compensation, rest days, breaks, working conditions, dismissals, medical insurance and pension maintenance.</p> <p>Migrant employees employed by the Company will be engaged on equivalent terms and conditions to non-migrant employees carrying out similar work.</p> <p>Staff recruitment and selection shall be carried out, as a rule, among a local community, and vacancies for people with disabilities will be provided as well. The Company has limited the working hours for women working in the countryside, up to 36 hours a week. Monitoring of workforce and wages rate in different regions of the Company operation are regularly conducted.</p> <p>The Company is organizing transportation to a place of work for the Employees from remote locations.</p> <p>Job applicants from Bolshoy Bor village have a priority in hiring for CS "Portovaya".</p> <p>Partial compensation of accommodation expenses is additionally provided for Employees of Portovoye branch.</p>
employees' Organizations (paragraphs 13, 14)	<p>employees' organization is any entity of employees pursuing the aims of assistance and protection of Employees' interest as regards working conditions and terms of employment.</p> <p>The Company's employees are entitled to join the United Trade Union Organization for Oil and Gas and Construction Industry Employees (hereinafter referred to as the UTUO).</p> <p>The UTUO, all-Russia independent, voluntary public association established at Founding congress unites the trade union members working in the organizations of Oil and Gas complex, petrochemical and chemical industry, electric power sector irrespective of their organizational legal forms and forms of ownership, individual entrepreneurs, as well as persons who are trained in initial, secondary and higher educational</p>

IFC PS2 requirements	The Company actions consistent with the requirements of PS 2
	<p>institutions linked by common labor, professional and other social and economic interests, operating in the territories of over one-half of Russian Federation subjects.</p> <p>The United Trade Union Organization complies with the Russian Federation Constitution, generally accepted principles and standards of international law, the laws of the Russian Federation and its subjects and the UTUO Charter as well.</p>
<p>Non-Discrimination and Equal Opportunity (items 15-17)</p>	<p>Discrimination is any distinction, exclusion or preference made on the basis of race, color, gender, religion, political opinion, national extraction or social origin, which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation.</p> <p>Staff recruitment and hiring in the Company complies with Labor law requirements proceeding from generally accepted principles and standards of international law, such as freedom of labor, equal rights and opportunity for Employees, unemployment security and promotion of employment, prohibiting forced labor (including child labor) and employment discrimination on the basis of gender, color, nationality, language, origin and etc.</p> <p>The Company undertakes to apply to its business the ILO Convention concerning “Discrimination in respect of employment and occupation” No.111.</p>
<p>Retrenchment (items 18, 19)</p>	<p>Retrenchment is considered as the last resort and only after all other alternatives have been exhausted.</p> <p>If collective dismissals can’t be avoided, a retrenchment plan should be developed and implemented to reduce the adverse impacts of retrenchment on employees and their communities. The retrenchment plan will cover such issues as analysis of alternatives to retrenchment, schedule of dismissals, methods and procedures of retrenchment, selection criteria, severance payments mandated by law, letter of offer or promotion in alternative employment or retraining.</p>
<p>Grievance Mechanism (item 20)</p>	<p>The Company worker can address a complaint if any concern has been raised at workplace.</p> <p>An Employee of the Administrative staff should address a complaint to the UTUO or to a deputy general director of HR and social development.</p> <p>A worker of the Company branch should address his complaint to the Human Resources department.</p> <p>The Company is registering all the complaints and provides track and control on implementation of whatever corrective actions to follow.</p> <p>Upon considering a complaint an Employee has the right to be supported by and/or represented by a colleague or a representative of the UTUO.</p> <p>A worker who raised a concern should not be an object of repressions or retribution.</p>
<i>Protecting the Work Force</i>	
<p>Child labor (item 21)</p>	<p>Child labor is a work performed by children that is economically exploitative, or is likely to be hazardous or to interfere with the child’s education, or to be harmful to the child’s health or physical, mental, spiritual, moral, or social development. A person under 18 years is considered a child. Some types of work performed by children are not</p>

IFC PS2 requirements	The Company actions consistent with the requirements of PS 2
	<p>classified as child labor, but only if it is legal and safe. One hour of economic activity of children under age 12 is automatically qualified as child labor. Over two hours of children’s participation in economic activity every day during more than 6 days a week even if it does not affect their health and interfere with their schooling, is automatically classified as child labor. Any work that is hazardous or interfere with child’s education is automatically considered as child labor. Light work should not affect child’s health and their safety or interfere with their schooling or orientation training. Teens 15-17 years old are allowed to work maximum 40 hours a week if a job corresponds to their age. Any hazardous occupations that are harmful to physical, mental or ethic child’s health, safety and morality are automatically classified as child labor. National minimum of minors age for employment should not be less than age of finishing compulsory school that is, as a rule, 15 years old. The Company does not exploit child labor. Permanent job is only provided for persons who have reached the age of 18 years.</p>
<p>Forced labor (item 22)</p>	<p>Forced labor consists of any work or service that is not voluntarily performed by the individual, but under the threat of force or penalty. Some organizations including ILO and International Organization for Migration (hereinafter referred to as IOM) address the issues of forced or compulsory labor. The Company is governed in its activity by the provisions of the ILO Convention "Forced Labor" No 29 and national labor law, and does not allow the forced or compulsory labor.</p>
<p>Occupational Health and Safety (item 23)</p>	<p>The Company annually performs the necessary arrangements to improve working environment of Employees engaged in works with harmful occupational factors. In accordance with National Law No 426-Φ3 of December 28, 2013 since 2014 the Company is regularly conducting the special assessment of working conditions that confirms the effectiveness of such arrangements. All benefits and compensations under local regulations of PC "Gazprom" and national law are provided to the employees exposed to harmful working conditions. The Company supplies employees with personal protective equipment (PPE) to prevent and mitigate the impact of hazardous and harmful operational factors to employees’ health and safety. Management plan of Occupational Health and Safety is provided Appendix 20.</p>
<p>Employees Engaged by Third Parties (item 24-26)</p>	<p>The Company estimates the employment relations between a contractor and employees and ensures that all contractors comply with national law requirements including the requirements of minimum wage, hours of work, overtime compensation, health and safety conditions, medical and pension contributions and other terms mandated by law for employees engaged by third parties. The third party employs the contracted employees on the basis of non-discrimination and in a manner consistent with national and international</p>

IFC PS2 requirements	The Company actions consistent with the requirements of PS 2
	standard of quality, safety, reliability and professional competence.
Supply Chain (item 27-29)	<p>The Supply chain includes the materials, components, goods or products used in the Company activities.</p> <p>Supply chain could be complicated and include a large number of suppliers of different levels. Therefore, the Company creates “maps” of supply chain. These “maps” include the identification of suppliers, definition of potentially significant negative risks and impacts related to supply chain and sets the priority of suppliers based on risk levels.</p> <p>Due to the dynamic character of the supply chain this process needs to be repeated from time to time. Control of supply chain is integrated in the general management system.</p>

5 Basic Provisions of the Company’s Trade Union Agreement for 2013–2018

Trade Union Agreement is a legal Act regulating social and employment relations within an organization or with an individual entrepreneur signed between employees and employer represented by their respective representatives.

The Trade Union Agreement has been entered into between the Company’s employees as represented by Chairman of the Company’s United Trade Union Organization (hereinafter referred to as the UTUO) of the Trade Union for Oil and Gas and Construction Industry Employees, who is operating pursuant to the Charter, and the Company (hereinafter referred to as the Employer) as represented by General Director of the Company.

The Trade Union Agreement for 2013-2015 has been prolonged up to 2018 under the additional agreement.

Information on the procedure of social benefits, guarantees and compensations granted to the Company’s employees, as established under the Trade Union Agreement is provided in Table 18.2.

Table 18.2.

Information on the procedure of social benefits, guarantees and compensations granted to the Company’s employees, as established under the Trade Union Agreement

Trade Union Agreement Clause	Wording of the Company’s Trade Union Agreement Clause
6.1.1	<p>The Employer undertakes to compensate Employees:</p> <p>a) not oftener than once a year for expenses made in the territory of the Russian Federation and either Belarus or Armenia Republics for sanatorium and resort, tourist and other accommodations which are on the balance sheet of PC “Gazprom” and its subsidiaries or which are the investment objects of the above organizations.</p> <p>Compensation of the above expenses are made for:</p>

Trade Union Agreement Clause	Wording of the Company's Trade Union Agreement Clause
	<p>- purchase of sanatorium and resort, tourist, and other vouchers; - stay in hotels, places of recreation and resort; - travel to and back from the places of recreation; depending on the service record with the gas industry, at the rate of: 1 to 5 years = 40 %; 5 to 10 years = 60 %; 10 to 20 years = 70 %; More than 20 years = 85 %.</p> <p>In this case, the abovementioned compensation for a voucher cost is also paid for one family member of the Employee, who traveled together with Employee for recreation or treatment purposes, at the rate of 50% of the Employee's compensation, but not more than 50% of the family member expenses. Total payment to an Employee should not exceed eleven minimal base wage rates.</p> <p>Entitlement to compensation for expenses is granted to Employees who have not had a recent medical rehabilitation treatment within current year under a voluntary medical insurance agreement and have not been compensated previously under sub-clause b) of Clause 6.1.1 hereof.</p> <p>Entitlement to compensation for expenses under sub-clause a) of Clause 6.1.1 of the Agreement starts from the moment of Employee return from such trip (upon submission of the documents confirming the expenses incurred and actual fact of recreation itself) and reserved for Employee within current calendar year. In case of Employee's return from the trip within last three months of the year, the entitlement to compensation will be still valid during the initial three months of the next year.</p> <p>Compensation will be calculated depending on Employee's service record with the Company which is estimated in compliance with Appendix 2 to the Agreement as of the date of return from the trip;</p> <p>b) 85% compensation (100% for Employees' children under 17 years (included)) of the cost of voucher to "Goluboy fakel" resort for the period of more than 10 days to those Employees and their family members, who have not had a recent medical rehabilitation treatment within current calendar year under a voluntary medical insurance agreement and have not been compensated previously under sub-clause a) of Clause 6.1.1 hereof.</p> <p>100% compensation of cost of voucher to "Goluboy fakel" resort to Employees who are engaged in hazardous works and (or) operating under harmful working conditions and participating in the special-purpose trips organized by and in accordance with the Company's order;</p> <p>c) 85% compensation (100% for Employees' children under 17 years (included)) of cost of Corporate voucher (up to 10 days) to the "Goluboy fakel" resort to Employees and their family members regardless rehabilitation treatment received by them under a voluntary medical insurance agreement as well as compensation used under sub-clauses a) and b) of Clause 6.1.1 hereof».</p> <p>The amount of compensation to Employees for the cost of voucher to "Goluboy fakel" resort (under sub-clauses b) and c) of the present Clause) may be increased by the Company order (considering available funds for social and employee benefits in the Company's budget).</p>
6.1.8	Provide a pecuniary aid to Employees in the amount of four minimal base wage rates upon a death of a spouse, children, and parents of an Employee.

Trade Union Agreement Clause	Wording of the Company's Trade Union Agreement Clause
	<p>In case there are several family members employed in the Society that are entitled for a pecuniary aid due to the death of a family member, the specified benefit will be granted to one Employee.</p>
6.1.13.2	<p>Partial compensation of the cost of dental services (including denture treatment) justified by medical indications, depending on the service record with the subsidiaries of PC Gazprom, as follows: 1 to 5 years = 40 %; 5 to 10 years = 60 %; 10 to 20 years = 70 %; More than 20 years = 85 %.</p> <p>The total payment to an Employee during a year should not exceed fifteen minimal base wage rates.</p> <p>When dental prostheses are made of precious metals, no compensation for the cost of precious metal is paid.</p> <p>Entitlement to partial compensation for the dental service cost is reserved to Employee within current calendar year (for the costs incurred within current calendar year). If the costs are incurred by Employee during the last three months of a year, entitlement to partial compensation will be still valid during the initial three months of the next year.</p> <p>Compensation will be calculated depending on the Employee service record with the Company which is estimated in compliance with Appendix 2 to the Agreement as of the date of dental services provided.</p>
6.2.7	<p>Grant a lump sum pecuniary aid in the amount of five minimal base wage rates to Employees who are married for the first time.</p> <p>If both spouses are employed with same organization, then above benefit will be granted to each of them.</p> <p>Entitlement to pecuniary aid is valid within a calendar year, during which the marriage has taken place. In case a marriage has taken place within the last three months of a year, the entitlement to pecuniary aid will be still valid during the initial three months of the next year.</p>
6.2.8	<p>Pay a lump sum pecuniary aid to one of the parents employed by the company, upon the birth of a child (adoption or guardianship of a child under three years a age) in the amount of ten minimal base wage rates.</p> <p>In case of the birth of two and more children (adoption or guardianship in the above-mentioned case), a lump sum pecuniary aid will be paid for each child.</p>
6.2.10	<p>95% compensation (payment) of the cost of vouchers to children's health and recreation facilities, purchased by the Employer (organized campaign) for Employees' children.</p> <p>95% of the cost of vouchers, but not more than 5 minimal base wage rates and not more than twice a year to compensate expenses of Employees for the kids at children's health and recreation facilities located at the territory of Russian Federation.</p> <p>If both spouses are employed with the same organisation then above benefit will be granted to one of them.</p> <p>Entitlement to compensation of Employees' expenses for the kids at health and recreation facilities will be reserved to an Employee within current calendar year (for the costs incurred within current calendar year). In case the costs are incurred by Employee within the last three months of a year, the entitlement to</p>

Trade Union Agreement Clause	Wording of the Company's Trade Union Agreement Clause
	<p>compensation will be still valid during the initial three months of the next year. Compensation for the travel expenses of Employees' children travelling as organized group to health and recreation facilities (under Agreements signed by the Company):</p> <ul style="list-style-type: none"> - up to 100% when travelling by the Company transport; - 70% when travelling by other transport. <p>Arrange escort by the Company employees of organized groups of children to and back from recreation facilities.</p>
6.5.2	<p>Provide a one-time premium in amount of 0,5 of the minimal base wage rate to the Employees, whose education has not been paid by the Employer, and who graduated for a first time from a higher or a secondary vocational educational institution, without interruption to their work duties, and obtained a profession corresponding to the profile of their employment and Employer's needs.</p>
6.5.4	<p>50% compensation of expenses in case of death of a spouse, children, parents of an Employee to cover Employee's travel to the place of burial and back upon submission of travel documents by any means of transport (except taxi) and other supporting documents.</p>
6.5.5	<p>Once during a calendar year an additional pecuniary aid can be provided to Employees based on their personal claim, in amount of:</p> <p>a) 20% of amount of damage, but not more than twenty base wage rates:</p> <ul style="list-style-type: none"> – in case of damage due to a destruction or theft of personal property by unidentified persons, – in case of loss in a fire, at natural calamity and etc. (the supporting documents from competent authorities about the event resulting in damage should be provided); <p>б) two minimal base wage rates:</p> <ul style="list-style-type: none"> – to veterans of military operations at the territories of foreign countries as well as to former military men, who conducted a mission under emergency conditions and armed conflicts, – to employees exposed to radiation impact as a result of the accident at Chernobyl Nuclear Power Station and the persons with equivalent rights, who have the corresponding certificates, – to disabled persons, became disabled while performing their work duties in PC "Gazprom transgaz Saint-Petersburg" and other organizations whose legal successor was LLC "Lentransgas".
6.5.6	<p>Compensate 100% of the cost to Employee for the travel to a place of medical examination and treatment approved by the Employer as well as to the place of treatment organized under 6.1.13 e Clause) of the Agreement.</p> <p>Compensation will be granted once a calendar year and calculated as follows:</p> <ul style="list-style-type: none"> – when travelling by air or water transport – upon presented tickets on a tariff of economy class; – when travelling by rail transport – upon presented tickets not more than fare rate in a compartment car of fast premium service train; – when travelling by intercity bus - upon presented tickets; – when travelling by personal transport – in amount of railway fare (economy class) or bus fare (if no railway connection) on the basis of statement on tariff cost at the date of departure to recreation and back, though not more than actual travel cost.

Trade Union Agreement Clause	Wording of the Company's Trade Union Agreement Clause
6.5.7	<p>Compensation to Employees and their family members for the cost of subscriptions to visit centers and clubs of culture and sport institutions, purchased for personal and a family member, except for the grounds provided by Clause 6.5.12, in amount of:</p> <ul style="list-style-type: none"> – 70% of service cost– one subscription for Employee personal use; – 50% of service cost– one subscription for a family member visiting such culture and sport institutions together with an Employee. <p>Other subscriptions for an Employee and his family members are not compensated.</p> <p>Total payment to one Employee should not exceed two minimal base wage rates within a year.</p> <p>If Employee use subscriptions to visit two sports and fitness (sports and recreation) centers, which are on the balance sheet of the Company, the costs will be compensated for both subscriptions (with taking into consideration the limits of total annual payment).</p>
6.5.10	<p>Additional pecuniary aid to Employees based on their personal claim, in amount of:</p> <p>a) two minimal base wage rates once per calendar year:</p> <ul style="list-style-type: none"> – to families with many children; – to Employees with a dependable disabled child; and with a disabled child of 18 years old if he or she is not able to self-support and live independently (this statement should be confirmed by Medical Social Expertize (MSE) and by an individual rehabilitation program for a disabled person); – to single mothers/fathers; – to widowed persons, who have children under 18 years and children under 24 years studying full-time at educational institutions; – to Employees being official guardians (sponsor) of children, who is dealing with upbringing children without father/mother; to Employees in case the guardian (sponsor) of children, dealing with upbringing children without father/mother is Employee's spouse, on condition that the children, sponsors and their spouses are living together; <p>b) 0,25 of the minimal base pay per month:</p> <ul style="list-style-type: none"> – to families with many children; – to single mothers/fathers, widowed persons; – to low-income families whose total income for each family member do not exceed the cost of living in this region; – to Employees with a dependable disabled child; and with a disabled child of 18 years old if he or she is not able to self-support and live independently (this statement should be confirmed by Medical Social Expertize (MSE) and by an individual rehabilitation program for a disabled person); – to Employees being official guardians (sponsor) of children, who is dealing with upbringing children without father/mother; to Employees in case the guardian (sponsor) of children, dealing with upbringing children without father/mother is Employee's spouse, on condition that the children, sponsors and their spouses are living together; <p>c) five minimal base wage rates once per five years – to low-income families to compensate partially for the housing repair expenses.</p> <p>The amount of an additional pecuniary aid granted hereunder does not depend on</p>

Trade Union Agreement Clause	Wording of the Company's Trade Union Agreement Clause
	<p>the number of children supported by an Employee. When Employees are entitled to a pecuniary aid on several grounds, the payment should be made on each one. If both spouses are employed with the same organization, the above benefit should be granted to one of them.</p>
6.5.11	<p>Partial compensation of Employee expenses (parental charges) for maintenance of children at pre-school educational institutions at 0,1 rate of the minimal base pay per month per a child though not more than actual costs. The above compensation is paid base on personal request of Employee, upon submission of relevant supporting documents. Parental charges for maintenance of children in the Children Harmonious Development Centers which are on the balance sheet of the Company is 0,1 of minimal base wage rate per month per child. If both spouses are employed by the same organization, this benefit is granted to one of them.</p>
6.5.12	<p>Compensate Employees based on their personal statements the cost of additional education of children (preschool and school age) at musical, sport, computer schools, foreign languages schools (at the place of Employees' residence) and in other Children development centers (institutions, schools, clubs and etc.) for actual costs, but not more than 0,1 of minimal base wage rate per month per child, on condition that all relevant supporting documents are provided.</p>
6.5.13	<p>Compensation of 60% of actual cost of travel of Employee and one family member on condition of their joint travel to rehabilitation and recreation treatment or individually organized travel (to and return). Compensation for travel cost shall be calculated and granted in case of travelling by: – air or water transport – upon presented tickets on a tariff of economy class; – rail transport – upon presented tickets not more than fare rate in a compartment car of fast premium service train; – intercity bus - upon presented tickets; – personal transport – in amount of railway fare (economy class) or bus fare (if no railway connection) on the basis of document confirming the stay in recreation facility received at the final destination and statement on tariff cost at the date of departure to recreation and back, though not more than actual travel cost (calculated per Employee irrespective of number of passenger in the car). If an Employee spends a vacation in several recreation facilities, then he or she should be compensated for the travel expenses only to one of the selected location and back. Maximal payment to Employee shall not exceed three minimal base wage rates. The above payment will be made if no grounds for compensation under Clause 6.1.1 a) are available and not more than once a year.</p>
6.5.16	<p>One-time aid based on Employee's personal request for a relocation allowance at the rate of four minimal base wage rates to young Employees, who are employed for the first time with PC "Gazprom transgaz Saint-Petersburg" within six months immediately following the graduation from higher and secondary vocational educational institutions (in case this is their first education) upon condition of relocation to a new residence from other locations of Russian Federation.</p>

Trade Union Agreement Clause	Wording of the Company's Trade Union Agreement Clause
	<p>The amount of one-time aid to Employees of divisions located in the regions of Far North and equivalent, and who are living in these areas should be calculated with regional coefficient applied to a wage.</p> <p>Payment of the above-mentioned one-time aid will be made irrespective of one-time aid paid under 6.2.5 Clause hereof.</p> <p>Entitlement to one-time aid is reserved for one year period from the date of the employment contract comes in force.</p> <p>In case an employment contract is terminated before expiration of three years from the date of its conclusion on the initiative of young Employees (at their own will) or for faulty actions which according to labor law and other labor and employment regulations are the grounds for termination of the employment contract at the initiative of the Employer, the one-time aid may be retrieved from young Employees proportionally to the time of their work in the company, unless otherwise provided by an employment contract.</p>
6.5.17	<p>Interest-free loans on a contractual basis in amount of five minimal base wage rates for household welfare to young families, if a service record with the Company is at least one year, with a two-year repayment period, starting from 13th month after the loan is granted, taking into consideration an opinion of department (branch) manager and United Trade Union Organization.</p> <p>The above loan is granted, if at the time of marriage an applicant was an Employee of PC "Gazprom transgaz Saint-Petersburg".</p> <p>Entitlement to a loan is reserved for a calendar year, in which the marriage has taken place. In case marriage has taken place within the last three months of a year, entitlement to a loan is valid during the first three months of next year.</p>

Appendix № 32-03-06-01-19

Occupational safety management plan

1 Purpose

The purpose of the Occupational Safety Management Plan is:

- to manage risks to the Company personnel health, related to the Project activities;
- to execute a special inspection of working conditions;
- to identify hazards and assess risks in occupational and industrial safety.
- to design and implement an action program to improve working conditions and occupational safety, aimed at prevention of industrial injuries, as well as improvement and sanitary enhancement of working conditions, decrease of occupational diseases rate and improvement of working capability and occupational performance.

The Occupational safety management Plan should be reviewed together with the Population healthcare, safety and protection organization Plan.

2 Statutory and other requirements

The Occupational Safety Management Plan has been developed in compliance with the following documents:

- "Interindustry rules of providing working personnel with special workwear, safety footwear and other types of personal protection equipment" (approved by the RF Ministry of Health and Social Development Order of June 01, 2009 No. 290n);
- "Standard industry rates of free provision of special workwear, safety footwear and other types of personal protection equipment to the working personnel and employees of branches, structural units, subsidiaries and affiliates of PC "Gazprom" (approved by the RF Ministry of Health and Social Development Order of April 07, 2004 No. 43);.
- The RF Ministry of Health and Social Development order of March 01, 2012 No. 181n "On approval of the Checklist of annual employer measures for improvement of working conditions and occupational safety and decrease of occupational hazards level".
- FZ of December 28, 2013 no. 426 – FZ "On special inspection of working conditions".
- Gazprom STO 18000.1-002-2014 "Hazards identification and risks evaluation".
- IFC General EHS Guidelines.
- IFC PS 2 "Personnel and working conditions".

The purpose of applying IFC PS 2 to the Project is to provide for safe and healthy working conditions, and to protect and improve the Company personnel health.

The company provides to the personnel safe and healthy working conditions, taking into account industry-specific risks and special types of hazards at the operation sites of the Company. The Company takes actions to prevent incidents, injuries and diseases, which can arise in the course of operation activity, by minimizing the impact on personnel from harmful industrial factors, as far as possible.

In compliance with IFC PS 2 requirements the Company should provide the personnel with safe and healthy working conditions taking into considerations industry-specific risks and special types of hazards at operation sites of the Company including physical, chemical, biological and radiological hazards, as well as specific dangers for women.

3 Occupational safety management

3.1 Purposes in the area of occupational and industrial safety protection

The Company and its branches design OH&IS targets to be verified and restated at least every 5 years. The Company OH&IS targets are outlined in Table 19.1.

Table 19.1.

The Company OH&IS targets

No	OH&IS targets	The expected result of the target achievement	Target achievement deadline	Department responsible for target achievement	Program reference (action plan)
1	The Company personnel's life and health preservation	Lack of fatal injuries of the Company personnel	throughout a year	Company structural units, branches	1,3,4,6,7,8,9,10,11,12,13
		A decrease of total amount of road traffic accidents in the Company (through the fault of an employee or an employer) relating to 2015-2017 average ratio no less than by 5%	throughout a year	Company structural units, branches	1, 13
2	Improvement of effectiveness of industrial control for OH&IS requirements	No violations revealed by the state supervision bodies, which were not revealed earlier in the course of administratively industrial control	throughout a year	Company structural units, branches	3,4,5,11,12,13

No	OH&IS targets	The expected result of the target achievement	Target achievement deadline	Department responsible for target achievement	Program reference (action plan)
3	Reduction of cardiovascular disease fatality at the workplaces	Reduction of work-related cardiovascular disease fatality by 5 % as per medium-term linear forecast for the last 5 years in PC “Gazprom”	throughout a year	Company structural units, branches	2,4
4	Provision of OPO safe operation	Prevention of failure to complete 2018 gas transportation plan caused by reasons related to safe operation of HIF	throughout a year	Company structural units, branches	5
5	Provision of reliability of hazardous industrial facilities operation	A decrease of number of accidents and incidents in the Company HIF by 5 % as per medium-term linear forecast for the last 5 years in PC “Gazprom”	throughout a year	Company structural units, branches	5,13
6	Provision of the fire safety requirements implementation of the Company facilities.	No fire outbreaks and fire accidents at the Company facilities	throughout a year	Company structural units, branches	11, 12, 13

Plan of actions

1. Action plan to prevent road traffic accidents in the Gazprom PC affiliates approved by deputy chairman of Gazprom PC board V.A. Markelov on June 20, 2014.
2. Basic Action plan of heart disease prevention in Gazprom transgaz St.-Petersburg LLC.
3. Action plan of safety provision at work in electrical installations in Gazprom transgaz St.-Petersburg LLC.
4. Action plan to improve Company working conditions and occupational safety (STO Gazprom 18000.1-001-2014).

5. Plan of works related to Company industrial safety (STO Gazprom 18000.1-001-2014).
6. Action plan to prevent workers falling from same level surface in the Gazprom transgaz St.-Petersburg LLC.
7. Action plan of accident prevention from impact of moving and collapsing parts of machines and objects on the personnel in the Gazprom transgaz St.-Petersburg LLC.
8. Action plan of accident prevention related to falls of subjects, materials and earthworks slips in the Gazprom transgaz St.-Petersburg LLC.
9. Action plan of accident prevention in case of employees attacked by third parties
10. Action plan of accident prevention at loading and unloading works in the Gazprom transgaz St.-Petersburg LLC.
11. Administrative and technical Action plan of fire safety provision for Gazprom PC facilities in 2018.
12. Action plan of fire safety provision at Gazprom PC facilities.
13. Key safety regulations.

3.2 Provision of the personnel with certified workwear, safety footwear and other types of PPE

PPE includes workwear, safety footwear and other types of hearing, eye, face, head and hands protection equipment, insulating suits, Respiratory Protective Equipment, equipment to prevent falls from heights and complex protection equipment.

In case of operation in harmful (or) hazardous working conditions, as well as operations implemented in special temperature conditions or related to contamination, the certified PPE, washing agents and detergents are provided to the Company personnel in accordance with established standards.

PPE are provided for free to the personnel in accordance with:

- Rates of free provision of certified workwear, safety footwear and other types of PPE to the employees of branches, structural units, subsidiaries and affiliates of Gazprom PC;
- Standard rates of free provision of certified high visibility warning clothing to the employees of all branches of economy;
- Standard rates of free provision of washing agents and (or) detergents and occupational safety standard “Provision of employees with washing agents and (or) detergents”.

Employees are provided with washing agents and (or) detergents (hereinafter referred to as the WAD) for protection from harmful industrial factors during operations connected with:

- special temperature conditions
- contamination
- possibility of insect stings

For this Health and Safety specialist of each branch makes a list of employees' positions and occupations for which WAD delivery is required (hereinafter referred to as the List of WAD). List of WAD is agreed with a representative of elected body of PPO and approved by a branch director (chief engineer - first deputy director).

PPE is provided on the basis of requests for PPE procurement. Requests are issued annually (for a calendar year) or on as needed basis, confirmed by order of Company General director.

In the branches, the PPE requests are prepared by managers of structural units and approved by Health and Safety specialist. An economist of material and technical supplies department receives requests from all units for the whole PPE list and issues a consolidated request of the branch.

Standard rates of free provision of certified workwear, safety footwear and other types of personal protection equipment to the personnel of Portovoye branch are outlined in Table 19.2.

Table 19.2.

Standard rates of free provision of certified workwear, safety footwear and other types of personal protection equipment to the personnel of Portovoe, Severnoe and Volkhovskoe branch

Occupation or position	Personal protection equipment type	Yearly allowance (units or sets)
GAS, GAS LIQUID, OIL, PETROLEUM PRODUCTS TRANSPORTATION, UNDERGROUND STORAGE AND USE; BULK PLANTS; PETROLEUM, OIL AND LUBRICANTS STORES PERSONNEL		
Gas turbine unit operator; compressor units operator; compressor operator; processing unit repairman employed at main pipeline facilities	<p>Cotton antistatic suit with oil- and water-repellent impregnation</p> <p>Cotton underwear</p> <p>Summer headwear (kepi or baseball cap)</p> <p>Combined gauntlets or Gloves with protective coating</p> <p>Knitted cotton gloves</p> <p>Leather boots or high boots</p> <p>Ear protectors</p> <p>Safety glasses</p> <p>Safety helmet</p> <p>In case of winter outdoor operations additionally:</p> <p>Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation in the zones I, II, III</p> <p>Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation and cold-proof underwear in the zone IV and the special zone</p> <p>Wool underwear in the zones III, IV and the special zone</p> <p>Ear-flapped hat</p> <p>Cold-proof helmet lining in zones I, II, III</p> <p>Knitted helmet lining in zones III, IV and the special zone</p> <p>Helmet sherpa lining in zone IV and the special zone</p>	<p>1</p> <p>2 sets</p> <p>1</p> <p>36 pairs</p> <p>until wear-out</p> <p>12 pairs</p> <p>1 pair</p> <p>until wear-out</p> <p>until wear-out</p> <p>1 for 2 years</p> <p>according to zones</p> <p>according to zones</p> <p>1 set</p> <p>1 for 2 years</p> <p>1</p> <p>1</p> <p>1 for 2 years</p> <p>2 pairs</p> <p>2 pairs</p>

Occupation or position	Personal protection equipment type	Yearly allowance (units or sets)
	<p>Cold-proof gauntlets or Frostproof gloves made of polymer materials Fur gauntlets in zone IV and the special zone Leather fur high boots or mukluks in zones III, IV and the special zone Felt boots Overshoes for felt boots</p> <p>In case of hot and gas hazardous work at explosion hazardous facilities, additionally: Antistatic fire-proof fabric suit with oil- and water-repellent impregnation</p>	<p>1 pair 1 pair for 3 years according to zones 1 pair for 2 years 1 for 2 years</p>
<p>Line inspector; Line pipefitter</p>	<p>In case of field gas system maintenance work: Cotton antistatic suit with oil- and water-repellent impregnation Cotton underwear Summer headwear (kepi or baseball cap) Waterproof raincoat Leather boots or high boots Rubber high boots Combined gauntlets or Gloves with protective coating Knitted cotton gloves Ear protectors Safety glasses Safety helmet</p> <p>In winter additionally: Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation in zones I, II, III Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation and with cold-proof underwear in zone IV and the special zone Wool underwear in zones III, IV and the special zone Short fur coat or fur suit in zones III, IV and the special zone</p>	<p>1 2 sets 1 1 for 3 years 1 pair 1 pair 36 pairs until wear-out 12 pairs until wear-out until wear-out 1 for 2 years according to zones according to zones 1 set 1 for 4 years 1 for 2 years 1</p>

Occupation or position	Personal protection equipment type	Yearly allowance (units or sets)
	<p>Ear-flapped hat Cold-proof helmet lining in zones I, II, III Knitted helmet lining in zones III, IV and the special zone Helmet sherpa lining in zone IV and the special zone Cold-proof gauntlets or Frost-proof gloves made of polymer materials Fur gauntlets in zone IV and the special zone Leather or fur high boots or muklaks in zones III IV and the special zone Fur stockings in zones III, IV and the special zone Felt boots Overshoes for felt boots</p>	<p>1 1 for 2 years 2 pairs 2 pairs 1 pair 1 pair for 3 years 2 pairs according to zones 1 pair for 2 years</p>
<p>Main gas pipeline operator; condensate collection and cleanup operator</p>	<p>Suit cotton antistatic with oil- and water-repellent impregnation Cotton underwear Summer headwear (kepi or baseball cap) Leather high boots Combined gauntlets or Gloves with protective coating Cotton knitted gloves Safety glasses Safety helmet In winter additionally: Protection suit for low temperatures with a cold-proof snap-on construction made of antistatic fabric with oil- and water-repellent impregnation in zones I, II, III Protection suit for low temperatures with a cold-proof snap-on construction made of antistatic fabric with oil- and water-repellent impregnation and with cold-proof underwear in zone IV and the special zone Wool underwear in zones III, IV and the special zone Ear-flapped hat Cold-proof helmet lining in zones I, II, III Knitted helmet lining in zones III, IV and the special zone</p>	<p>1 2 sets 1 1 pair 24 pairs until wear-out 12 pairs until wear-out 1 for 2 years according to zones according to zones 1 set 1 for 2 years 1 1 1 for 2 years</p>

Occupation or position	Personal protection equipment type	Yearly allowance (units or sets)
	<p>Helmet sherpa lining in zone IV and the special zone</p> <p>Cold-proof gauntlets or</p> <p>Frost-proof gloves made of polymer materials</p> <p>Fur gauntlets in zone IV and the special zone</p> <p>Leather or fur high boots or mukluks in zones III, IV and the special zone</p> <p>Felt boots</p> <p>Overshoes for felt boots</p> <p>For main gas pipeline operator operating a personal computer:</p> <p>Cotton antistatic suit with oil- and water-repellent impregnation or</p> <p>Cotton antistatic overall</p> <p>Summer headwear (kepi or baseball cap)</p> <p>Leather boots</p> <p>Rubber high boots</p> <p>Combined gauntlets or</p> <p>Gloves with protective coating</p> <p>Knitted cotton gloves</p> <p>Ear protectors or</p> <p>Earplugs</p> <p>Safety glasses</p> <p>Safety helmet</p> <p>In winter additionally:</p> <p>Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation in zones I, II, III</p> <p>Protection suit for low temperatures a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation and cold-proof underwear in zone IV and the special zone</p> <p>Cold-proof helmet lining in zones I, II, III</p> <p>Knitted helmet lining in zones III, IV and the special zone</p> <p>Helmet sherpa lining in zone IV and the special zone</p> <p>Cold-proof gauntlets or</p>	<p>2 pairs</p> <p>2 pairs</p> <p>1 pair</p> <p>1 pair for 3 years according to zones</p> <p>1 pair for 2 years</p> <p>1</p> <p>1</p> <p>1</p> <p>1 pair</p> <p>1 pair</p> <p>6 pairs</p> <p>until wear-out</p> <p>6 pairs</p> <p>until wear-out</p> <p>until wear-out</p> <p>until wear-out</p> <p>1 for 2 years</p> <p>according to zones</p> <p>according to zones</p> <p>1</p> <p>1</p> <p>1 for 2 years</p> <p>2 pairs</p> <p>2 pairs</p> <p>1 pair</p>

Occupation or position	Personal protection equipment type	Yearly allowance (units or sets)
	Frost-proof gloves with polymer coating Fur gauntlets in zone IV and the special zone Felt boots Overshoes for felt boots	according to zones 1 pair for 2 years
Engineer; technician; engineer, senior technician carrying out equipment and instrumentation inspection	<p style="text-align: center;">SUPERVISORY AND PROFESSIONAL STAFF</p> Cotton antistatic suit or Cotton antistatic overall Cotton underwear Summer headwear (kepi or baseball cap) Waterproof raincoat Leather high boots or boots Rubber high boots or Water boots Gloves with protective coating or Knitted cotton gloves Ear protectors or Earplugs Safety glasses Safety helmet In winter additionally: Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation in zones I, II, III Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation and with cold-proof underwear in zone IV and the special zone Wool underwear in zone IV and the special zone Short fur coat or fur suit in zones III, IV and the special zone Ear-flapped hat Cold-proof helmet lining in zones I, II, III Knitted helmet lining in zones III, IV and the special zone	1 for 2 years 1 2 sets 1 1 for 3 years 1 pair 1 pair 1 pair 12 pairs 12 pairs until wear-out until wear-out until wear-out 1 for 2 years according to zones according to zones 1 set 1 for 4 years 1 for 2 years 1 1 1 for 2 years 2 pairs

Occupation or position	Personal protection equipment type	Yearly allowance (units or sets)
	Helmet sherpa lining in zone IV and the special zone Cold-proof gauntlets or Frost-proof gloves with polymer coating Fur gauntlets in zone IV and the special zone Leather or fur high boots or mukluks in zones III, IV and the special zone Fur stockings in zones III, IV and the special zone Felt boots Overshoes for felt boots	2 pairs 1 pair 1 pair for 3 years 2 pairs according to zones 1 pair for 2 years
Supervisory and professional staff carrying out administrative and production monitoring at the operating and construction facilities for gas, gas condensate and oil production, preparation and transport	Cotton antistatic suit with oil- and water-repellent impregnation Cotton underwear Summer headwear (kepi or baseball cap) Waterproof raincoat Leather high boots or boots Rubber high boots or Water boots Canvas gauntlets or Acid-proof gauntlets or Gloves with protective coating Knitted cotton gloves Ear protectors or Earplugs Safety glasses Safety helmet In winter additionally: Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation in zones I, II, III Protection suit for low temperatures with a snap-on warming construction made of antistatic fabric with oil- and water-repellent impregnation and with cold-proof underwear in zone IV and the special zone Wool underwear in zones III, IV and the special zone	1 2 sets 1 until wear-out 1 for 4 years 1 pair 1 pair 12 pairs 12 pairs until wear-out 12 pairs until wear-out until wear-out until wear-out until wear-out 1 for 2 years according to zones according to zones 1 set 1 for 5 years 1 for 3 years

Occupation or position	Personal protection equipment type	Yearly allowance (units or sets)
	Short fur coat or fur suit in zones III, IV and the special zone Ear-flapped hat Cold-proof helmet lining in zones I, II, III Knitted helmet lining in zones III, IV and the special zone Helmet sherpa lining in zone IV and the special zone Cold-proof gauntlets or Frost-proof gloves with polymer coating Fur gauntlets in zone IV and the special zone Leather or fur high boots or mukluks in zones III, IV and the special zone Fur stockings in zones III, IV and the special zone Felt boots Overshoes for felt boots	1 1 1 for 2 years 1 pair 1 pair 1 pair 1 pair for 2 years 2 pairs according to zones 1 pair for 2 years

3.3 Special inspection of working conditions

According to FZ dated 28.12.2013 No. 426 – FZ "On special assessment of working conditions" the Company performs a special assessment of working conditions (hereinafter referred to as SAWC).

The Portovoye LPMMP branch and other Company branches work on implementation of action plans aimed at improvement and sanitary enhancement of working conditions following SAWC results. The Action Program for Working Conditions and Occupational Safety Improvement is provided in Table 19.3.

3.4 Identification of hazards and risks assessment related to occupational health and industrial safety

There is a procedure for hazards identification and assessment of risks and management of risks related to OH&IS, identification and assessment of risks is performed in accordance with STO Gazprom 18000.1-002-2014. Scheduled hazards identification and risks assessment in OH&IS, under normal and emergency conditions, is performed at least once in 5 years.

3.5 Action program for working conditions improvement

The results of Hazards identification and risks assessment in occupational and industrial safety protection, as well as results of special inspection of working conditions, are the basis for introduction of measures to mitigate (prevent) significant risks and improve working conditions.

The Company occupational safety department designs annually an Action program to improve working conditions and occupational safety. The action program is designed with taking into account the "Checklist of annual employer measures to improve working conditions and occupational safety, and decrease level of occupational hazards ". The Action program is approved by Company Chief engineer.

The Action program for working conditions and occupational safety improvement is designed taking into account the following:

- the results of special inspection of working conditions and risks assessment in occupational safety;
- statutory and other requirements in occupational safety applicable to the Company activities;
- financial, productive and commercial capabilities of the Company;
- data on accidents and incidents at hazardous industrial facilities and industrial incidents;
- results of the Company achievement of targets set for previous time periods;
- results of certification and compliance audits by independent audit organizations;
- results of analysis of the unified occupational safety management system by the senior management.

The Company action program for working conditions and occupational safety improvement is outlined in Table 19.3.

Table 19.3.

Action program for working conditions and occupational safety improvement

Action	The responsible for action implementation	Frequency
Special inspection of branch personnel working conditions according to the set procedure	HSD of the Company management.	Annually
Acquiring and installation of devices signaling of industrial equipment malfunction, tripping devices, and devices that allow avoidance of hazardous situations evolvment in case of full or partial loss and consequent recovery of electrical connection	Chief officer of the branch power and water supply service	Annually
Protection of industrial equipment components from an	Chief officer of the	Annually

Action	The responsible for action implementation	Frequency
impact of moving parts, as well as from objects flying apart, including retention pins, blocking systems, insulating and other components	gas transportation preparation complex	
Application of color coding and safety signs on industrial equipment, controlling and monitoring devices, construction, communication elements and other objects	Services chief officers HSP specialists group	Annually
Implementing of mandatory preliminary and periodic health examinations according to the set procedure	First-aid medical post manager	Annually
Establishment and implementation of industrial monitoring	Chief engineer	Annually
Provision of personnel with drinking water	Materials and technical supplies department engineer	Annually
Provision of personnel with special workwear, safety footwear and other types of personal protection equipment, washing agents and detergents.	Services chief officers HSP specialists group	Annually
Branch personnel training, briefing, occupational safety knowledge assessments.	Services chief officers specialists group	Annually

3.6 Health care management for CS Portovaya personnel

The Company runs the Medical Service holding a license to perform the medical activity. The Medical Service relates to the Management Directorate (hereinafter referred to as the MD) and is subordinated directly to Deputy General Director for Common Affairs; the Medical Service performs its activity pursuant to the Medical Service Regulations.

The Company's Branches run a first-aid medical post that performs its activity pursuant to the First-Aid Medical Post Regulations of "Gazprom transgaz Saint-Petersburg" LLC. Management and control of the first-aid medical post activity is responsibility of the MD Medical Service.

Primary duties of a first-aid medical post are:

- Render first medical aid to employees of the Branch and other attached contingent, as a basic of medical care system. This includes preventive measures, diagnostics, therapy of diseases and medical conditions, medical rehabilitation, pregnancy monitoring, creation of healthy life style and sanitary-hygienic education of employees.

– Administer and perform a set of preventive treatment actions to maintain and enhance health of the branch employees, prevent and reduce the general and occupational morbidity.

– Maintain sanitary and epidemiological welfare of the branch.

The scope of medical aid at a first-aid medical post of the branch has been specified under the Unified Requirements for First-Aid Medical Post Operations of "Gazprom transgaz Saint-Petersburg" LLC.

The first-aid medical post of Portovoye Branch comprises: Manager – Therapist, Paramedic, and Nurse.

Every first-aid medical post has its personnel vaccination schedule. The vaccination of the personnel shall be made against influenza, tick-borne encephalitis, and hepatitis.

Every first-aid medical post has its approved List of Medications. A List of Medications for the first-aid medical post of Portovoye Branch is given in table 19.4.

Table 19.4.

List of Medications for the first-aid medical post of Portovoye Branch

Range of Products		
A		
Activated charcoal	Alcoholic iodine solution	Artificial lung ventilation aid
Activtex Burn Treatment kit	Ambrobene	Ascorbic acid
Adhesive plaster	Ammonia	Ascorbic acid
Adrenaline	Analgin	Aspirin C
Aerius	Antigrippin	Atropine sulfate
Airway	Arifon retard	
B		
Baralgin M	Bioparox	Brilliant green solution
Betaloc ZOK	Bleeding pens	Burn Treatment kit
Betaserc	Bonded towel	Buscopan
Biform		
C		
Calcium gluconate	Clinical thermometer	Cordiamin
Cardiopulmonary resuscitation kit	Codelac	Corinfar
Cefalexin	Coldrex HotRem	Corvalolum
Cerebrolysin	Concor	Cotton wool
Cerucal	Constrictor	Curaplast
Cifran OD	Container tank	Cystone
Claritin		
D		
Dexamethasone	Diroton	Disposable sterile forceps
Dibazol	Disinfection tank	Disposable sterile polymer forceps
Diclofenac-Akri	Disposable spreader	Dressing
Dimedrol		
E		
ECG electrodes	Elastic bandage	Enterol
ECG recording paper	Elastic tubular bandage	Ercefuryl

Range of Products		
Efferalgan 500	Electronic thermometer	Euphyllin
Egilok	Enap-HL	Eye-bath
F		
Fastum gel	First Aid kit	Flemoxin Solutab
Fenistil	First-aid kit for employees, Decree No. 169n	Flixonase
Fervex UPSA		
G		
Gastal	Gliatilin	Glucose
Gauze towel	Gloves	Glucose solution
General-purpose first-aid kit	Glucometer	Glucose solution
H		
Hepatitis vaccine	Hydrocortone ointment	Hypothermal package
Holding adhesive bandage	Hydrogen peroxide	Hypothizid
Human tick-borne encephalitis immunoglobulin	Hypothermal container package	
I		
Infusion transfusion system	Isoket	
J		
Javel Solid		
K		
Ketanov	Kidney-shaped basin	
L		
Lasix	Linex	Lisinopril
Libexin	Liquid antibacterial soap	Lysobact
M		
Magnesium sulfate	Medical towels	Monocinque
Medical ethanol	Meliseptol Foam	Motor first-aid kit
Medical sheet	Mesaton	Movalis
Medical spreader	Miramistin	
N		
Nebilet	Nolicin	Normax
Nexium	Noliprel A forte	No-Spa
Nitroglycerine	Non-contact mouthpiece cup	Novocaine
Nitrospray	Non-sterile bandage	Nurofen
O		
Ocilia	Ophthalmoferon	Otipax
Olasolum		
P		
Panangin	Phezam	Prednisolon
Panzinorm forte	Phosphalugel	Preductal MR
Papaverine hydrochloride	Pinosol	Prestarium
Pentalgin	Polydexa	
R		
Renitec	Rennie	Rinofluimucil
S		
Salbutamol	Sodium chloride	Strepsils
Sebidin	Sofradex	Sulfacylum sodium
Septolete	Solpadeine Fast	Sumamed
Shoe covers	Sterikont	Suprastin
Smecta	Sterile bandage	Suprax
Sodium benzoate caffeine	Sterile towels	Surgical cotton
Sodium chloride	Stopangin	Surgical knife

Range of Products		
T		
Tavanic	Test strips	Trental
Tavegyl	Theraflu	Tubular bandage
Telfast	Thrombo ASS	
U		
Ultrtop	Ursofalk	
V		
Valeriana	Validol	Vibrocil
Valeriana extract	Valocordin	Vinpocetine
Z		
Zyrtec		

The following reporting documentation is maintained in medical aid post of Portovoe Branch:

- Out-Patient Visit Log.
- Procedural Log.
- Procedure Unit Quartz Treatment Log.
- Equipment Sterilization Log.
- General Procedure Unit Cleaning Unit Log.
- Personal Employee Recording Card Index (employees on payroll).
- New Employee Log.
- Active Immunization Log.
- Injury Log.
- Virus Hepatitis and Chronic Hepatitis Patient Log.
- Regular Medic Checkup Patient Log.
- Harmful Work Environment Employee Card Index.
- Emergency Hospitalization Log.
- Virulent Disease Log.
- Institutional Sanitary State Log.

The following medical equipment is available in the medical facility of Portovoe Branch:

- tonometer – for blood pressure monitoring;
- BOP apparatus – for medical treatment procedures by UV-rays;
- ECG device;
- Bone splints for fixation of upper and lower limbs;
- Stretchers;
- Cardiopulmonary resuscitation device CPR Ezy;

- Orthopedic collar;
- Syringe needles destructor.

Every year, the Company's Branches develop a First-Aid Medical Post Action Plan. A First-Aid Medical Post Action Plan of Portovoye Branch is provided in Table 19.5.

Table 19.5.

First-Aid Medical Post Action Plan of Portovoye Branch for 2016

Description of work	Performing parties	Performance period	Responsible officer
<i>Treatment and Diagnostic Activities</i>			
Arrangements for and rendering of emergency medical aid to branch employees, attached personnel, retired employees in case of diseases, injuries, etc.	Medical personnel of the First-Aid Medical Post	Throughout a year, on a case-by-case basis	Manager of the First-Aid Medical Post
Arrangements for transportation and, if necessary, escorting of patients to medical treatment institutions	Medical personnel of the First-Aid Medical Post	Throughout a year (if necessary)	Manager of the First-Aid Medical Post
Out-patient reception, examination, and treatment of employees, attached personnel, and retired employees requesting medical aid	Medical personnel of the First-Aid Medical Post	Throughout a year	Manager of the First-Aid Medical Post
Arrangements for consulting by medical specialists and further examinations for branch employees, retired employees, and attached personnel at clinics under Voluntary Medical Insurance Agreement (High Medical Technology), including major clinics of St. Petersburg and Moscow	Medical personnel of the First-Aid Medical Post through St. Petersburg Branch of Sogaz PC	Throughout a year	Manager of the First-Aid Medical Post
Arrangements for in-patient assistance for branch employees, retired employees, and attached personnel at medical treatment institutions under Voluntary Medical Insurance Agreement with Sogaz PC	Medical personnel of the First-Aid Medical Post through St. Petersburg Branch of Sogaz PC	Throughout a year	Manager of the First-Aid Medical Post
Regular medical check-up of the Company's employees and attached personnel	Medical personnel of the First-Aid Medical Post	Throughout a year	Manager of the First-Aid Medical Post
Maintenance of medical records (out-patient cards, medication supply, expenditure, delivery logs, etc.)	Medical personnel of the First-Aid Medical Post	Every day	Manager of the First-Aid Medical Post
Pre-doctor care	Paramedical personnel of the First-Aid Medical Post	Every day in accordance with medical appointments	Manager of the First-Aid Medical Post
Medical maintenance of mass (cultural and sport) events	Medical personnel of the First-Aid Medical Post	Under an action plan	Manager of the First-Aid Medical Post
Medical maintenance and support of children rest	Medical personnel of the First-Aid Medical Post	Under a children visiting schedule for rehabilitation	Manager of the First-Aid Medical Post

Description of work	Performing parties	Performance period	Responsible officer
		treatment	
Performance of pre-voyage and post-voyage examinations, maintenance of records concerning pre-voyage and post-voyage examinations	Medical personnel of the First-Aid Medical Post, who are trained (certified) in performance of examinations	Every day	Manager of the First-Aid Medical Post
<i>Preventive Activities</i>			
Arrangements for and performance of vaccination for the Company's employees	Medical personnel of the First-Aid Medical Post	Under a national preventive vaccination calendar	Manager of the First-Aid Medical Post
Arrangements for and performance of nonspecific prevention of virulent diseases	Medical personnel of the First-Aid Medical Post	During epidemically important seasons	Manager of the First-Aid Medical Post
Arrangements for performance of preventive regular medical examinations for employees, whose labor relates to harmful industrial impacts	Medical personnel of the First-Aid Medical Post	Throughout a year under an approved schedule	Manager of the First-Aid Medical Post
Involvement in meetings of the Sanatorium Screening Board	Manager of the First-Aid Medical Post	When arranged, under a schedule	Manager of the First-Aid Medical Post
Implementation of target-oriented preventive programs	Medical personnel of the First-Aid Medical Post	Throughout a year	Manager of the First-Aid Medical Post
<i>Organizational and Methodological and Training Activities</i>			
Acquisition, consolidation, data analysis, and issue of a report as per corporate reporting forms (75-gas)	Medical personnel of the First-Aid Medical Post	For a half-year, year (under a schedule)	Manager of the First-Aid Medical Post
Acquisition, data analysis, and issue of a report on virulent diseases of the Company's employees	Medical personnel of the First-Aid Medical Post	For a half-year, year (under a schedule)	Manager of the First-Aid Medical Post
Performance of official duties by First-Aid Medical Post's employees	Medical personnel of the First-Aid Medical Post	Every day	Manager of the First-Aid Medical Post
Preparation of documents for licensing of medical activities	Medical personnel of the First-Aid Medical Post	January-February 2014	Manager of the First-Aid Medical Post
Involvement in medical conferences, meetings, advanced training	Medical personnel of the First-Aid Medical Post	When arranged, under a schedule	Manager of the First-Aid Medical Post
<i>Medical Supplies</i>			
Calculation of requirements, issue of requisitions for immunologic preparations, medicines, consumables, disinfectants, medical equipment	Manager of the First-Aid Medical Post	During Quarter I	Manager of the First-Aid Medical Post
Storage, recording, and writing-down of medicines	Accountable medical officers	Every month	Manager of the First-Aid Medical Post
<i>Sanitary and Anti-Epidemic Activities</i>			

Description of work	Performing parties	Performance period	Responsible officer
Compliance with anti-epidemic procedures at the First-Aid Medical Post	Medical personnel of the First-Aid Medical Post	Throughout a year	Manager of the First-Aid Medical Post
Performance of sanitary outreach activities and training of employees in rendering of first-aid medical aid	Medical personnel of the First-Aid Medical Post	Throughout a year under an approved schedule	Manager of the First-Aid Medical Post
<i>Veteran Relations</i>			
Arrangements for out-patient consulting and in-patient examinations	Medical personnel of the First-Aid Medical Post	When a request is received	Manager of the First-Aid Medical Post
Regular medical check-up of attached retired employees of the Company	Medical personnel of the First-Aid Medical Post	Throughout a year	Manager of the First-Aid Medical Post

In case of accident the first medical aid is provided by the qualified medical personnel of CS "Portovaya" medical aid facility. In case the injuries of a worker are moderate or severe, the medical facility personnel is calling the emergency ambulance, which transports the injured person to the medical facilities (Central hospital) of Vyborg town. The distance from CS "Portovaya" to Vyborg town is 47 km, the time needed for ambulance to arrive at a site is about 30 minutes. The qualification of medical personnel and equipment available in the medical facility makes it possible to provide the necessary medical assistance to the injured employee, until the ambulance arrives.

The Company annually signs the voluntary medical insurance (VMI) agreement with insurance company. All Company employees are provided with VMI policies for competent and specialized medical assistance at the best medical institutions. Employees and their family members, retired employees, veterans of the Great Patriotic War shall be provided with a competent and specialized medical assistance at home, medical outpatient and inpatient treatment under the insurance program including diagnostic studies, physical therapy and other types of treatment.

3.7 Monitoring of CS "Portovaya" personnel health state

Every year, the Company's Medical Service is making a report on key health indicators of the Branches and Company employees, and submit it to Gazprom PC. A form of report on key health indicators of the Portovoye Branch employees is provided in Table 19.6.

1	2	3	4	5	6	7	8	9	10	11	12	13
female pelvic ganglions												
Pregnancy, maternity and down-lying period diseases												
Congenital anomaly (abnormalities), deformations and chromosome disorders												
Symptoms, indications, and abnormalities identified during clinic and laboratory studies that are not classified under other headings												
Part B. For all entities (except for columns 4 and 5) listed under Appendix 1 hereto												
<i>(to be completed based on sick slips accepted for payment (columns 6-7) and data from personnel departments on employees who became disabled and died during reported period (columns 9-13))</i>												
Injuries, intoxications, and other external causes (<i>incapacity cause codes</i>) 02, 04, 10)												
Other causes that are not listed in lines 01-40, 43, 44, 45, including diseases with International Classification of Diseases (<i>incapacity cause codes</i> 01, 06, 07, 11)												
Total diseases, injuries, and other external causes (sum of lines 01, 06, 08, 09, 12, 15, 17, 18, 19, 23, 27, 31, 32, 33, 37, 38, 39, 40, 41)												
Patient care (<i>incapacity cause code</i> 09)												
After-treatment at sanatoria (<i>incapacity cause code</i> 08)												
Release from work due to quarantines and bacteria carriers (<i>incapacity cause code</i> 03)												
Total of all causes (sum of lines 42, 43, 44, 45)												
Pregnancy and maternity leave (<i>incapacity cause code</i> 05)												

*) - under Decree dated 26.04.2011 No. 347n of the Russian Public Health and Social Development Ministry. "On Approval of Sick Slip Format"

3.8 Risks management for health protection of CS “Portovaya” personnel.

In the process of the Project operation the CS Portovaya personnel can be exposed to the following negative Project environmental impacts:

- Atmospheric air emissions;
- Impact on surface and underground water bodies;
- Physical impact;
- Possibility of industrial emergency situations

Operation of CS “Portovaya” has major influence on the components of environment and, consequently on health and safety of the personnel and local population.

For the purpose of preventing and minimizing possible negative impact on the personnel health the Company regularly carries out quality monitoring of atmospheric air, surface and underground water and physical factors as well. The programmes of such types of monitoring are given in the corresponding Appendixes (Appendix 7, Appendix 8, Appendix 5).

Safety activities of Personnel in case of emergency are provided in Appendix 21.

Appendix № 32-03-06-01-20

Facilities access management plan

1 Goals and tasks

Primary goals of the Facilities Access Management Plan are as follows:

- Provide security of facilities in accordance with RF legislation requirements, and create conditions eliminating a possibility of illegal intrusion acts or mitigating considerably the consequences of such acts.
- Provide the antiterrorist protection of facilities in accordance with RF legislation requirements, within competency defined by responsibilities of affiliated company, that owns the facility on the basis of ownership or other legal right.
- Prevent offences against property of affiliated company.
- Eliminate or minimize the influence of threats preventing normal functioning of the Facilities.
- Create secure conditions for personnel and visitors of the Facilities.
- Render assistance to the state law-enforcement bodies in administration of law and order.

The following tasks are solved while achieving the main goals of security of Facilities and property protection:

- Arrange local standards data base covering Facilities security and property protection issues, and keep it updated, with taking into consideration the actual conditions and changes to the RF legislation.
- Create in accordance with RF legislation requirements, and organize the functioning of departmental (in-house) security service units at the Facilities.
- Determine the Facilities security (protection) system.
- Organize and provide the access control procedure and security control inside the Facilities.
- Plan the equipment of the Facilities with the security systems and improvement of complex security systems installed, and organize the proper use of such systems.
- Ensure the high level of training of Facilities personnel and security units to act in emergency situations and elimination of revealed threats and illegal offences.
- Organize interaction with law-enforcement agencies and inform them about situation in the Facilities' surroundings.

2 Statutory and other requirements

The Facilities Access Management Plan has been developed in compliance with:

- Federal law dated 7.21.2011 No. 256-FZ "On Safety of Fuel and Energy Industrial Facilities".
- Federal Law dated 13.12.1996 No. 150-FZ "On Arms".
- Federal Law dated 24.07.1994 No. 222-FZ "On Product Supplies for Federal Governmental Requirements".
- Federal Law dated 14.04.1999 No. 77-FZ "On Departmental (in-house) Security Service".
- Resolution of the RF Government # 458 "On Establishing Rules to provide security and protection against terrorism of Fuel and Energy Complex Facilities" dated May 05, 2012.
- Resolution of the RF Government # 551 "On some issues related to departmental security service activities to provide security of Fuel and Energy Complex Facilities " dated June 04, 2015.
- Resolution of the RF Government # 993 "On establishing requirements to providing security of linear facilities of Fuel and Energy Complex" dated September 19, 2015.
- IFC PS 4 "Community Health, Safety, and Security".

A purpose of applying IFC Performance Standard 4 is to ensure that property security and personnel safety are provided under the principles of human rights protection and in the procedure that provides for elimination or minimization of risks to the affected communities.

In case the Company hires employees either directly or under a contract, to secure personnel and property of the Facilities, it is necessary to assess risks related to accepted security measures for people at the Project territory and beyond.

3 Site security

3.1 Organization of departmental security service

Departmental security service of the organization–owner of the integrated gas supply system performs the protection of Fuel and Energy Complex Facilities, owned by such organization and (or) its subsidiaries, as well as production delivered under state contract.

Physical security of the Company's facilities is provided by a Branch of Gazprom PC, "North-West Interregional Security Department of Gazprom PC in St. Petersburg" (hereinafter referred to as Security Department).

Primary goals of Security Department are:

- Provide protection of the secured Facilities against illegal offences.
- Provide the access control procedure and security control inside the Facilities.
- Prevent and terminate offences and administrative violations at the secured Facilities.
- Security of Fuel and Energy Complex facilities intended for production, processing, transportation and storage of product delivered under the state contract, and property needed to fulfill the state contract, owned by the organization-owner of Integrated gas supply system and (or) its subsidiaries.
- Provide physical protection of Fuel and Energy Complex facilities.

Key principles of the Security Department's activity are as follows:

- Respect of human rights and freedoms;
- Law and order.
- Interaction with state security bodies.

The legal regulation of departmental security service is performed in accordance with the Federal Law dated 14.04.1999 No. 77-FZ "On Departmental Security Service", and other federal laws, as well as other legal acts established on the basis of these laws.

The departmental security service employee can be citizen of Russian Federation, who has reached the age of 18 years, with health condition, and business qualities suitable for performance of duties assigned to the security service department.

The employees of security service operate under RF Labor legislation.

The employees of security service are required to be medically examined, as well as to pass the periodical tests to check the ability to operate in the conditions where the use of physical force, special tools and weapons may be needed. These examinations and tests are performed in accordance with the procedure established by the Ministry Health and Ministry of Internal Affairs of Russian Federation.

The professional training of security service employees is performed in accordance with the procedure defined by federal bodies and organizations entitled to establish the departmental security service.

The security service employees perform their duties dressed in uniform, with service certificates and ID cards, the samples of which are designed and established by federal bodies and organizations entitled to establish the departmental security service.

It is forbidden to use uniform models used by state paramilitary organizations.

The security service employees upon completion of professional training and medical examination are entitled to apply physical force, special tools and firearms in accordance with provisions of Federal Law, while performing their duties.

The security service employees performing duties related to inventory, storage, weapons-bearing and weapons use, should be registered in the state fingerprint data base, in accordance with Federal Law.

The person can not be accepted as employee to the security service in case of the following:

- Acknowledgement of person as disabled or impaired by valid Court decision;
- Unexpunged or outstanding conviction;
- Absence of registration at place of residence;
- Medical condition confirmed by medical organization conclusion, that prevents execution of duties by the person;
- Person is deprived of right to hold a position in a state civil services, local government bodies, or perform security service duties, by valid Court decision.

3.2 Site Security Actions

Access control and site security procedures at the Project Facilities – provide regulatory, administrative, and material guarantees for prevention, identification, and restraint of offences against the Company’s legal rights, assets, intellectual properties, industrial discipline and protected information.

3.3 Site Security Interactions

When arranging the interaction activities, the Branches and Security Service of Portovoe LPMMPL, Severnoe LPMMPL and Volkhovskoe LPMMPL, are governed by:

- Federal Law dated 13.12.1994 No. 60-FZ "On Product Supplies for Federal Governmental Requirements" as amended on 24.07.2007 No. 222-FZ,
- Federal Law dated 21.07.2011 No. 256-FZ "Security of Power and Energy Complex Facilities”;
- Federal Law dated 14.04.1999 No. 77-FZ "On departmental security”;
- Resolution of the RF Government "Establishing rules to ensure security and anti-terroristic protection of Power and Energy Complex Facilities" dated 05.05.2008, No. 458
- Resolution of the RF Government "Some issues related to departmental security activity to provide security of Power and Energy Complex Facilities" dated 04.06.2015, No. 551,

- Resolution of the RF Government "Establishing requirements to provide security of linear facilities of Power and Energy Complex" dated 19.09.2015, No. 993,
- United Nation's (UN) Code of Conduct for Law Enforcement Officials, and UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials
- "Model Security Regulations for Facilities of Gazprom PC, put in force by Gazprom PC Decree No.99 dated 26.12.2001,
- "Manual for Facilities Security Using Technical and Engineering Security Means",
- "Program for Introductory Occupational Health Briefing at Jobs for Employees with Gazprom PC Branch "North-West Interregional Security Department of Gazprom PC in St. Petersburg, Who Perform Security Activities at the Company's Facilities",
- Instruction manuals for access control and site security procedures at the protected facilities,
- Effective agreements,
- IFC Performance Standard 4 "Community Health, Safety and Security"
- Other regulations.

Interactions between the Branch and Security Department Service are provided in order to:

- Ensure proper security of the products supplied under a governmental contract, the Project facilities, and other assets required for performance of governmental contracts as well as properties as required to ensure stable gas supply system operation;
- Implement the access control and site security procedures at the operated Project facilities (protected facilities);
- Ensure proper operation of the integrated technical and engineering security means installed at the protected facilities;
- Prevent acts of sabotage and terrorism and other illegal actions at the protected facilities.

4 Site access control procedures

4.1 General Provisions

Basic requirements for management and support of access control and site security procedures at the Project facilities shall comply with the RF laws.

A primary purpose of access control procedure is to provide regulatory, administrative, and material guarantees for prevention, identification, and restraint of offences against the

Company's legal rights, assets, intellectual properties, industrial discipline, and protected information.

4.2 Access Control Procedure

The Chief Officer of Security Service is responsible for administrative and technical arrangements of access control procedure.

Management of access control procedure is the responsibility of a duty shift of the Security Department, which personnel shall know the access control practices established at the facility, the effective documents concerning the procedure of access to (from) the facility) for the employees and visitors, delivery and removal of the inventories and documents.

Responsibility for compliance of employees with the access control procedure at the Company's structural subdivisions is held by Chief Officers of respective structural subdivisions.

The following types of pass ticket are established: permanent, temporary, and material, as well as motor vehicle pass ticket.

Permanent pass tickets (cards) are issued to the Company's employees admitted for permanent employment as well as employees with other entities, who maintain permanently the Branch's process plant.

Temporary pass tickets are issued to persons employed temporarily, seconded to the Company.

Material pass tickets (consignment notes) for taking out inventories to structural subdivisions, are issued by the Security Service.

Motor vehicle pass tickets. Access to (from) the facility area for motor vehicles, owned by the company, is provided after personal pass card, motor vehicle pass ticket and a waybill are presented by the driver.

In order to prevent potential attempts of unauthorized transportation of people, arms, munitions, explosives, radiation sources, and strong toxic substances, all the motor vehicles at the entrance gate are subject to visual inspection by personnel of Security Department's units, using technical means. The Security Department personnel is authorized to perform a detailed inspection of motor vehicles and transported cargos, including use of special equipment.

A list of items prohibited for transportation to the facility:

- fire and cold arms;
- explosives and explosive substances and items;
- large-size items (without a material pass ticket).

All the motor vehicle movements across the transport gate check point (GCP) boundary are recorded on a motor vehicle arrival (departure) log.

Unimpeded access of special motor vehicles of the corporate fire-fighting department should be provided with information given to CS controller.

When an escape situation is announced at the facility, all the gates and wicket-doors leading outside facility fencing should be opened, including a process entrance gate.

4.2.1 Procedure for Access of the Company's Employees, Attached Persons and Visitors through Gate Check Points

Access of the employees and visitors to the premises of the Project facilities, particular structural subdivisions and back, is through gate check points under pass tickets established by the Branch. A pass ticket is the basic document entitling to enter and exit. A pass ticket and identity card should be presented to Security Department employee at every arrival to (departure from) the facility.

Access of persons employed temporarily, third party employees, arriving to the facility to perform work, is granted upon presentation of temporary pass tickets valid with an identity card.

Access of visitors is allowed with pass tickets as per established format, a written request from authorized officer, on condition that accompanying person from the structural subdivision is available, and registration details are entered in the visitor log. Departure of visitors is only permitted in the presence of accompanying person from the structural subdivision of Portovoye Branch, at that the security guard on duty shall record the departure time in the log and the accompanying person is required to confirm it by signing.

A request for visit to Portovaya CS and other Project facilities by foreigners, other than those employed with entities of Gazprom PC and the Company, as well as foreign delegations, including those that are part of mixed groups, should be arranged by applying to Company's Corporate Security Department.

4.2.2 Site Security Procedure

The site security procedure at Portovaya CS governs the compliance with established routine and operating procedure, safety of personnel at Portovoye Branch, contractor company employees and visitors, control of inventories, equipment, and documents, as well as compliance with fire safety regulations and sanitary code in the technical premises of Portovoye Branch.

Walks around protected areas and premises by a security guard on duty are undertaken 24 hours a day.

The following is forbidden within secured facility area:

- To obstruct the fire driveways, primary and emergency entrances (exits), staircases, basement and roof space;
- To commit actions violating the established procedures for operation of technical security means and fire alarms;

- To bring arms, munitions, special means, explosives, drugs to the facility area;
- To smoke outside specially assigned places;
- To drink alcohol and use drugs at work;
- To take photos, make video and film records without consent of Branch Management.

4.2.3 Procedure of Activities upon Violation of Access Control and Site Security Procedures

The persons with signs of alcoholic, drug, psychotropic, and other intoxication at arrival to (departure from) the facility area, as well as those identified in the facility area, should be deprived of pass ticket by security employee, and the latter shall notify the controller of the access control procedure violation.

The persons attempting to pass (drive) through a GCP to (from) the facility under an invalid, another person's or improperly executed pass ticket should be deprived of the pass ticket by a duty employee and the latter shall make a report.

Appendix № 32-03-06-01-21

Emergency preparedness and response plan

1 Purpose

The purpose of Emergency Preparedness and Response Plan is:

- to prevent emergence and evolvement of accidents and emergencies at hazardous industrial facilities (HIF) of the Project – CS “Portovaya and linear section of North-European gas pipeline from CS “Volkhovskaya” to Portovaya Bay;
- to provide for the readiness of the organizations and branches that operate HIFs to eliminate consequences of possible accidents and emergencies;
- to design and implement an action plan to provide for industrial safety;
- to schedule emergency response drills and fire safety trainings.

The following topics are included in the present MP:

- A description of the response organization (structure, roles, responsibilities, and decision makers).
- Additional details on response procedures (details of response equipment and location, procedures, duties, contact details, etc.).
- Descriptions and procedures for alarm and communications systems.
- Description of on-site first aid supplies and available backup medical support.
- Description of emergency facilities.
- Description of survival equipment and gear, alternate accommodation facilities, and emergency power sources.
- Evacuation procedures.
- Emergency Medical Evacuation procedures for injured or ill personnel.
- Termination procedure of Emergency response activities.

2 Statutory and other requirements

The Emergency Preparedness and Response Plan has been developed in compliance with the following documents:

- FZ No. 116 of July 21, 1997 "On Industrial Safety of Hazardous Industrial Sites".
- IFC PS 1 "Environmental and Social Risks and Impacts Assessment and Management".
- IFC PS 4 "Health Protection and Population Safety".
- General EHS Guidelines.

The purpose of applying IFS PS 1 and 4 to the Project is to develop measures to provide for emergency preparedness and response actions, prevention and elimination of negative impact on health and safety of the communities affected in course of the Project lifecycle.

The Company develops and maintains the system of readiness and prompt response to emergency situations, in order to be ready to respond appropriately to an emergency/accident situation related to the Project, and to take measures aimed at prevention and reduction of harm caused to health of people and/or to the environment. Such preparation includes identification of activities and territories where accidents and emergency situations are possible, identification of groups of population and individuals who can suffer harm, establishment of response measures, provision for equipment and resources, distribution of responsibilities, communication with affected parties. The Company also provides assistance to the affected parties and cooperates with them in terms of their preparation for efficient actions in emergency situations.

3 Industrial safety management

3.1 General provisions

The purpose of the Emergency preparedness and response plan in the Company is to provide protection of substantial interests of individuals and community from accidents at HIF and from consequences of such accidents.

The main activities of the Company in the area of industrial safety are:

- prevention of emergence and evolution of accidents and emergencies at HIF;
- provision for readiness of organizations and branches that operate hazardous industrial objects for localization and elimination of consequences of the possible accidents and emergencies.

3.2 Industrial safety requirements to readiness for accident elimination activities at hazardous industrial facilities

In order to provide for readiness for accident elimination activities, a Company operating a HIF is obliged:

- to plan and implement measures for accident consequences elimination at the HIF;
- to make service contracts with professional emergency rescue services, and to establish professional emergency rescue services of its own;
- to possess financial and physical reserves for elimination of accident consequences;
- to train personnel to take actions in case of an accident or incident at HIF;
- to establish systems of monitoring, reporting, communication, and action support in case of accident, and to maintain the said systems in usable state.

The measures for accident consequences elimination at a HIF are planned through the design and approval of accident elimination plans at the HIF, the RF Government setting forth the requirements to the content of such plans.

3. 3 Emergency response plan in Portovoe Branch

3. 3. 1 Emergency response plan at CS "Portovaya"

The primary technology process at this facility involve processing of natural gas, which is explosion and fire hazardous material. Table 12.1 lists potential accidents and sites of their evolvment at the CS "Portovaya".

Emergency response procedure in case of accident at CS "Portovaya" is provided in the Action Cards 1-17, provided in Table 21.2.

Table 21.1.

List of potential accidents and their origination points at CS "Portovaya"

Potential accidents and sites of their evolvment		Elimination measures
Rupture of the main gas pipeline NEGP1 at the section from the safety valve No. 19-3 to the inlet valve no. 7-3u of the junction point, with or without combustion.		Action card No. 1
Rupture of the main gas pipeline NEGP2 at the section from the safety valve No. 19-4 to the inlet valve no. 7a-4u of the junction point, with or without combustion		Action card No. 2
Rupture of discharge manifold Du 800 of interdepartment process lines at the section from valves 21-3, 21-4 to the diagnostic pig, with or without combustion.		Action card No. 3
Rupture at the fittings of the gas-pumping unit.		Action card No. 4
Rupture of gas supply line from gas preparation plant-1,2, with or without combustion.		Action card No. 5
Rupture of fuel gas line from the gas preparation plant -1 to the gas pumping unit, with or without combustion.		Action card No. 6
Rupture of fuel gas line from the gas preparation plant 2 to the gas pumping unit, with or without combustion.		Action card No. 7
Rupture of interdepartment process lines of the Compressor Department-1 at the section between the safety node and valves 8-2, 8-3, 20-3, with or without combustion.		Action card No. 8
Rupture of interdepartment process lines of the Compressor Department-2 at the section between the safety node and valves 8, 8-1, 20-2, with or without combustion.		Action card No. 9
Rupture of CS process lines at the section from the preparation plant from valves 7-3u, 7-4u to the inlet valves 210-SDV-002, 220-SDV-002 of the adsorber lines, with or without combustion.		Action card No. 10
Rupture of process lines at the section from the outlet valves of the adsorber lines 210-SDV-062, 220-SDV-062 to valves 7a, 7a-1, 7a-2, 7a-3 of the CS safety node, with or without combustion.		Action card No. 11
Rupture of the CS process lines at the section from the outlet valves 8, 8-1, 8-2, 8-3 to the valves 21-1, 21-2, 21-3, 21-4, with or without combustion.		Action card No. 12
Rupture of the gas pipeline for own needs at the section from gas preparation plant -1 to the unit modular boiler, ventilation and heating units of the gas pumping unit, the common incineration complex		Action card No. 13
Rupture of the gas pipeline for own needs at the section from the gas preparation plant -2 to the ventilation and heating units of the gas pumping unit		Action card No. 14
Rupture of the gas pipeline for own needs at the section from gas preparation plant -1 to the power plant for own needs		Action card No. 15
Rupture of the gas pipeline for own needs at the section from gas preparation plant -2 to the power plant for own needs		Action card No. 16
Rupture of the fuel gas line in the gas pumping units piping		Action card No. 17

Table 21. 2.

Priority actions of personnel of gas compression service and other involved departments of Protovoe Branch in case of emergency at CS "Portovaya"

Action card No. 1

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the main gas pipeline NEGP1 at the section from the safety valve No. 19-3 to the inlet valve No. 7-3u of the junction point, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
<p>1) Turns off the valves 19-3, 7a-3u, 890. 34. 9. Connect the Compressor Departments-1,2 "to the ring" (by turning on valves 36r, 36r-1. Turn on the valves 36, 36-1, if they are not turned on). If it is impossible to turn off the valves 7a-3u, 890. 34. 9, turns off the adjacent section, turning off the valves 7-3u, 7a-4u, shuts down the gas pumping unit. Notifies the dispatcher and the gas-pumping unit management of the accident.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher 2) Report on the scale of the accident 3) Establish warning signs for the protection of the accident site, and security posts if necessary 4) Start accident containment and elimination 5) Implement accident site inspection and notify the manager responsible for accident elimination</p>
<p>2) If it is impossible to turn off the valve 19-3, turns off the valve 877-3. Reports to the shift engineer of the gas transportation preparation complex. Reports according to the flow-chart and organizes for the emergency response teams assembly. In case of fire, calls for the fire team of the departmental fire safety service.</p>	<p>Dispatcher, custodial service inspector</p>	
<p>3) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.</p>	<p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator</p>	
<p>4) Monitors the shutdown of the regeneration lines, gas transportation preparation plant (shutdown of regeneration furnaces burners).</p>	<p>Shift engineer of the gas transportation preparation complex, processing unit operator</p>	
<p>5) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.</p>	<p>Shift engineer, processing compressor operator, dispatcher</p>	
<p>6) Monitors turning off of the valves on site. In case of fire, notify the dispatcher of the need to call for the fire team of the departmental fire safety service. Takes measures against unauthorized valves reversal.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p>	
<p>7) After the branch director (technical director) arrival, accident elimination operations</p>		

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
are carried out under his supervision.	Manager responsible for accident elimination	

Action card No. 2

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the main gas pipeline NEGP2 at the section from the safety valve 7a-4u to the inlet valve 19-4 to the junction point, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>1) Turn off valves no. 7a-4u, 890-34. 9. If it is impossible to turn off the valves no. 7a-4u, 890-34. 9, disconnect the adjacent section by turning off the valves no. 7-4u, 19-3. Notify the Portovoye branch dispatcher and the gas-compressor service management of the accident.</p> <p>2) Notify by all possible means (loudspeaker communication, telephone and others) the people in the accident area (hazard area). In case of fire, calls for the fire team of the departmental fire safety service.</p> <p>3) Use reporting procedure. Notify the shift engineer of the gas transportation preparation complex.</p> <p>4) Monitors the shutdown of the regeneration lines of the gas transportation preparation plant (shutdown of regeneration furnaces burners).</p> <p>5) Evacuate all individuals in the accident area (hazard area) not participating in accident elimination. Provide for establishment of security posts at the approach routes (access ways) to the hazard zone.</p> <p>6) In case of injuries, give first (paramedical) aid, call ambulance if necessary.</p> <p>7) Make sure the valves are turned off. Take measures against unauthorized valves reversal. In case of fire, notify the dispatcher of the need to call for the fire team of the departmental fire safety service.</p> <p>8) Further accident elimination operations are carried out under the supervision of the</p>	<p>Shift engineer, processing compressor operator</p> <p>Dispatcher, shift engineer, processing compressor operator</p> <p>Dispatcher, custodial service</p> <p>Shift engineer of the gas transportation preparation complex, processing unit operator</p> <p>Shift engineer, processing compressor operator</p> <p>Shift engineer, processing compressor operator, dispatcher</p> <p>Shift engineer, processing compressor operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
manager responsible for accident elimination	Manager responsible for accident elimination	

Action card No. 3

Initial actions of the gas-compressor service and the involved departments personnel in case of accident
"Rupture of the discharge manifolds Du 800 of the interdepartment process lines at the section from valves 21-3, 21-4 to the diagnostic pig site, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
<p>1) Using the instruments (pressure loss), visually identify the emergency outlet manifold.</p> <p>In case of Rupture at the flow-line 1: close valve no. 21-13, close the valve at the diagnostic pig site SDV1204. Connect the Compressor Department-1,2 "to the ring" by turning on valves 36r, 36r-1. (Turn on the valves 36, 36-1, if they are not turned on).</p> <p>In case of Rupture at the flow-line 2: close valve no. 21-2, close the valve at the diagnostic pig site SDV1203. Connect the Compressor Department-1,2 "to the ring" by turning on valves 36r, 36r-1. (Turn on the valves 36, 36-1, if they are not turned on).</p> <p>In case of Rupture at the flow-line 3: close valve No. 21-3, close the valve at the diagnostic pig site SDV1103. Connect the Compressor Department-1,2 "to the ring" by turning on valves 36r, 36r-1. (Turn on the valves 36, 36-1, if they are not turned on).</p> <p>In case of Rupture at the flow-line 4: close valve No. 21-4, close the valve at the diagnostic pig site SDV1104. Connect the Compressor Department-1,2 "to the ring" by turning on valves 36r, 36r-1. (Turn on the valves 36, 36-1, if they are not turned on).</p> <p>If it is impossible to precisely identify the disrupted flow-line or in case of failure of the said valves reversal, shut down the compressor station by "Compressor Department-1 Emergency maintenance", "Compressor Department-2 Emergency maintenance" buttons, direct a gas compressor service team to the diagnostic pig site for valves reversal. Notify the Portovoye branch dispatcher and the gas compressor service management of the accident.</p> <p>2) Notify the Company diagnostic unit shift manager, shift engineer of the gas transportation preparation complex, use reporting and emergency response team assembly procedure.</p>	Shift engineer, processing compressor operator, dispatcher	<p>1) Arrive to the accident site and establish communication with the dispatcher.</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>3) Notify by all possible means (loudspeaker communication, telephone and others) people in the accident area (hazard area). In case of fire, calls for the fire team of the departmental fire safety service.</p> <p>4) Monitor the shutdown of the regeneration lines of the gas transportation preparation plant (shutdown of regeneration furnaces burners)</p> <p>5) Evacuate all individuals in the accident area (hazard area) not participating in accident elimination. Provide for establishment of security posts at the approach routes (access ways) to the hazard zone.</p> <p>6) In case of injuries, give first (paramedical) aid, call ambulance if necessary.</p> <p>7) Take measures against unauthorized valves reversal. In case of fire, notify the dispatcher of the need to call for the fire team of the departmental fire safety service.</p> <p>8) Further accident elimination operations are carried out under the supervision of the manager responsible for accident elimination</p>	<p>Dispatcher, shift engineer, processing compressor operator</p> <p>Shift engineer of the gas transportation preparation complex, processing unit operator</p> <p>Shift engineer, process unit operator</p> <p>Shift engineer, processing compressor operator, dispatcher</p> <p>Shift engineer, processing compressor operator</p> <p>Manager responsible for accident elimination</p>	

Action card No. 4

Initial actions of the gas-compressor service and the involved departments personnel in case of accident
"Rupture at the fittings of the gas pumping unit"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
<p>1) Shut down the gas pumping unit by "Gas Pumping Unit Emergency maintenance" button. In case of the failure of the Emergency maintenance button, shut down the compressor department by pressing the "Compressor Department Emergency maintenance" button. Notify the dispatcher and the gas compressor service management of the accident.</p> <p>2) Notify the shift engineer of the power and water supply service, the gas transportation preparation complex, execute notification according to the procedure, and organize the emergency response team assembly. In case of fire, call for the fire team of the departmental fire safety service.</p> <p>3) Monitors the process of the gas pumping unit emergency shutdown of the CS "Portovaya".</p> <p>4) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.</p> <p>5) Takes measures against unauthorized valves reversal.</p> <p>6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary</p> <p>7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Dispatcher, custodial service inspector</p> <p>Gas-pumping unit shift engineer</p> <p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial service</p> <p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Processing compressor operator, dispatcher.</p> <p>Manager responsible for accident elimination</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Action card No. 5

Initial actions of the gas-compressor service and the involved departments personnel in case of accident
"Rupture of the gas supply line from the gas preparation plant to the gas preparation plant-1,2, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>1) Emergency maintenance of the operating gas pumping units of the Compressor Department-1,2, EM of the unit modular boiler and the units of the power plant for own needs according to protection scheme "Low fuel gas pressure". Turn off valves T2, T4 at the preparation plant and 81-1, 81-2 in the piping of gas preparation plant -1,2 remotely from the Automatic Control System of the Compressor Department. If it is impossible to turn off the valve T2, T4 at the preparation plant and 81-1, 81-2, disconnect the adjacent section by turning off remotely T1, T3 of the preparation plant and valves T5, T13 on site in the piping of gas preparation plant-1,2. Turn off valves T6, T14, if they are on. Notify the Portovoye branch dispatcher and the gas compressor service management of the accident.</p>	<p>Shift engineer of the gas compressor service, processing compressor operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher 2) Report on the scale of the accident 3) Establish warning signs for the protection of the accident site, and security posts if necessary 4) Start accident containment and elimination 5) Implement accident site inspection and notify the manager responsible for accident elimination</p>
<p>2) Notify by all possible means (loudspeaker communication, telephone and others) people in the accident area (hazard area).</p>	<p>Dispatcher, Shift engineer, processing compressor operator</p>	
<p>3) Notify the shift engineer of the gas transportation preparation plant, power and water supply service. Use reporting procedure. In case of fire call for the fire team of the departmental fire safety service.</p>	<p>Dispatcher, custodial service</p>	
<p>4) Monitors the shutdown of the regeneration lines of the gas transportation preparation plant (shutdown of regeneration furnaces burners).</p>	<p>Shift engineer of the gas transportation preparation complex, processing unit operator</p>	
<p>5) Monitors the indoor switchgear transition of the CS power supply from the power plant for own needs to an external line.</p>	<p>Shift engineer of the power plant for own needs</p>	
<p>6) Evacuate all individuals in the accident area (hazard area) not participating in accident elimination. Provide for establishment of security posts at the approach routes (access ways) to the hazard zone.</p>	<p>Dispatcher, custodial service</p>	

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
8) In case of injuries, give first (paramedical) aid, call ambulance if necessary. Take measures against unauthorized valves reversal. In case of fire, notify the dispatcher of the need to call for the fire team of the departmental fire safety service.	Shift engineer, processing compressor operator	
9) Further accident elimination operations are carried out under the supervision of the manager responsible for accident elimination	Manager responsible for accident elimination	

Action card No. 6

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the fuel gas line from the gas preparation plant-1 to the gas pumping units, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
1) Emergency maintenance of the operating gas pumping units of the Compressor Department-1 according to protection scheme "Low fuel gas pressure". Monitor the Emergency Maintenance procedure of the operating gas pumping units. Turn off the valve T16 at the gas preparation plant-1, turn off the valve T15, if it is on. If it is impossible to turn off the valve T16, disconnect the adjacent section by turning off valves no. K1, K3 inside the gas preparation plant -1. Make sure the valves are turned off. Notify the Portovoye branch dispatcher and the gas compressor service management of the accident.	Shift engineer, processing compressor operator	1) Arrive to the accident site and establish communication with the dispatcher 2) Report on the scale of the accident 3) Establish warning signs for the protection of the accident site, and security posts if necessary 4) Start accident containment and elimination 5) Implement accident site inspection and notify the manager responsible for accident elimination
2) Notify by all possible means (loudspeaker communication, telephone and others) people in the accident area (hazard area).	Dispatcher, Shift engineer, processing compressor operator	
3) Use reporting procedure. In case of fire call for the fire team of the departmental fire safety service.	Dispatcher, custodial service	
4) Evacuate all individuals in the accident area (hazard area) not participating in accident elimination. Provide for establishment of security posts at the approach routes (access ways) to the hazard zone.	Dispatcher, custodial service	
5) In case of injuries, give first (paramedical) aid, call ambulance if necessary. Take		

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>measures against unauthorized valves reversal. In case of fire, notify the dispatcher of the need to call for the fire team of the departmental fire safety service.</p> <p>6) Further accident elimination operations are carried out under the supervision of the manager responsible for accident elimination</p>	<p>Shift engineer, processing compressor operator</p> <p>Manager responsible for accident elimination</p>	

Action card No. 7

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the fuel gas line from the gas preparation plant 2 to the gas pumping units, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
<p>1) Emergency maintenance of the operating gas pumping units of the Compressor Department-2 according to protection scheme "Low fuel gas pressure". Monitor the Emergency Maintenance procedure of the operating gas pumping units. Turn off valve T7 at the gas preparation plant 2, turn off T8, if it was on. If it is impossible to turn off the valve T7, disconnect the adjacent section by turning off valves no. K1, K3 inside the gas preparation plant 2. Make sure the valves are turned off. Notify the Portovoye branch dispatcher and the gas-compressor service management of the accident.</p> <p>2) Notify by all possible means (loudspeaker communication, telephone and others) people in the accident area (hazard area).</p> <p>3) Use reporting procedure. In case of fire call for the fire team of the departmental fire safety service.</p> <p>4) Evacuate all individuals in the accident area (hazard area) not participating in accident elimination. Provide for establishment of security posts at the approach routes (access ways) to the hazard zone.</p> <p>5) In case of injuries, give first (paramedical) aid, call ambulance if necessary. Take measures against unauthorized valves reversal. In case of fire, notify the dispatcher of the need to call for the fire team of the departmental fire safety service.</p>	<p>Shift engineer, processing compressor operator</p> <p>Dispatcher, Shift engineer, processing compressor operator</p> <p>Dispatcher, custodial service</p> <p>Dispatcher, custodial service</p> <p>Shift engineer, processing compressor operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
6) Further accident elimination operations are carried out under the supervision of the manager responsible for accident elimination	Manager responsible for accident elimination	

Action card No. 8

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the interdepartment process lines of the Compressor Department-1 at the section between the safety node and valves 8-2, 8-3, 20-3, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>1) Shut down the Compressor Department-1 by the "Compressor Department-1 Emergency Maintenance" button: emergency stop of gas pumping units of the Compressor Department-1 is carried out automatically, valve 36r-1 turns on, the following valves turn off: 7-2, 7b-2, 7a-2, 7v-2, 7-3, 7b-3, 7a-3, 7v-3, 20-1, 20b-1, 20a-1, 20v-1, 20-3, 20b-3, 8-2, 8-3, 8b-2, 8b-3, the following valves turn on: 22-2, 18-2, 8v-2, 18-3, 8v-3, 20a-3, 20s-3. In case of failure of the "Compressor Department-1 Emergency Maintenance", shut down the CS by pressing the button "CS Emergency Kill-Switch". Monitor the valves reversal and notify the dispatcher and gas compressor service management of the accident.</p> <p>2) Notifies the shift engineer of the gas transportation preparation complex. Reports according to the flow-chart and organizes for the emergency response teams assembly. In case of fire, calls for the fire team of the departmental fire safety service.</p> <p>3) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.</p> <p>4) Takes measures against unauthorized valves reversal.</p> <p>5) Monitors the shutdown of the regeneration lines of the gas transportation preparation plant (shutdown of regeneration furnaces burners).</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Dispatcher, custodial service inspector</p> <p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial services</p> <p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Shift engineer of the gas transportation preparation complex, processing unit operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.	Processing compressor operator, dispatcher	
7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.	Manager responsible for accident elimination	

Action card No. 9

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the interdepartment process lines of the Compressor Department-2 at the section between the safety node and valves 8, 8-1, 20-2, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
1) Shut down the Compressor Department-2 by the "Compressor Department-1 Emergency Maintenance" button: emergency stop of gas pumping units of the Compressor Department-2 is carried out automatically, valve 36r turns on, the following valves turn off: 7, 7b, 7a, 7v, 7-1, 7b-1, 7a-1, 7v-1, 20, 20b, 20a, 20v, 20-2, 20b-2, 8, 8b, 8-1, 8b-1, the following valves turn on: 22-1, 18, 8v, 18-1, 8v-1, 20a-2, 20s-2. In case of failure of "Compressor Department-2 Emergency Maintenance", shut down the CS by pressing the "CS Emergency Kill-Switch" button. Monitor the valves reversal and notify the dispatcher and gas compressor service management of the accident.	Gas-pumping unit shift engineer, processing compressor operator Dispatcher, custodial service inspector	1) Arrive to the accident site and establish communication with the dispatcher 2) Report on the scale of the accident 3) Establish warning signs for the protection of the accident site, and security posts if necessary 4) Start accident containment and elimination 5) Implement accident site inspection and notify the manager responsible for accident elimination
2) Notifies the shift engineer of the gas transportation preparation complex. Reports according to the flow-chart and organizes for the emergency response teams assembly. In case of fire, calls for the fire team of the departmental fire safety service.	Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial services	
3) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone. 4) Takes measures against unauthorized valves reversal.	Gas-pumping unit shift engineer, processing compressor operator Shift engineer of the gas	

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>5) Monitors the shutdown of the regeneration lines of the gas transportation preparation plant (shutdown of regeneration furnaces burners).</p> <p>6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.</p> <p>7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.</p>	<p>transportation preparation complex, processing unit operator</p> <p>Processing compressor operator, dispatcher</p> <p>Manager responsible for accident elimination</p>	

Action card No. 10

Initial actions of the gas-compressor service and the involved departments personnel in case of accident
"Rupture of the CS process lines at the section from preparation plant from valves 7-3u, 7-4u to the adsorber lines inlet valves 210-SDV-002, 220-SDV-002, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>1) Emergency Maintenance of gas transportation preparation plant according to the protection scheme "Low low gas pressure at inlet". Valves 7-3u, 7-4u, 7a, 7a-1, 7a-2, 7a-3, 210-SDV-002, 210-SDV-001, 210-SDV-004, 220-SDV-002, 220-SDV-001, 220-SDV-004 turn off automatically. Monitor valves reversal and notify the dispatcher and the gas transportation preparation complex management of the accident.</p> <p>2) During the gas transportation preparation plant Emergency Maintenance, the valves 36r, 36r-1 turn on, Emergency Maintenance of gas pumping units of the Compressor Department-1,2. In case of failure of the gas transportation preparation plant Emergency Maintenance, shut down the CS by pressing the "CS Emergency Kill-Switch" button. In case of the CS Emergency Kill-Switch failure, the shift engineer turns off the adjacent section from the Automated Working Station: turns off the valves 19-3, 19-4. Monitors valves reversal and notifies the dispatcher and gas compressor service management of the accident.</p>	<p>Shift engineer of the gas transportation preparation complex, processing unit operator</p> <p>Gas-pumping unit shift engineer, processing compressor operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
3) Notifies the shift engineer of the gas compressing service and of the gas transportation preparation complex. Reports according to the flow-chart and organizes for the emergency response teams assembly. In case of fire, calls for the fire team of the departmental fire safety service.	Dispatcher, custodial service inspector	
4) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.	Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial services	
5) Takes measures against unauthorized valves reversal.	Gas-pumping unit shift engineer, processing compressor operator	
6) Monitors the correct execution of the shutdown procedure of the gas transportation preparation plant.	Shift engineer of the gas transportation preparation complex, processing unit operator	
7) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.	Processing compressor operator, dispatcher	
8) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.	Manager responsible for accident elimination	

Action card No. 11

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the process lines at the section from the outlet valves of the adsorber lines 210-SDV-062, 220-SDV-062 to valves 7a, 7a-1, 7a-2, 7a-3 of the CS safety node, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
<p>1) Emergency Maintenance of gas transportation preparation plant according to the protection scheme "Low low gas pressure at outlet". Valves 7-3u, 7-4u, 7a, 7a-1, 7a-2, 7a-3, 210-SDV-062, 210-SDV-065, 210-SDV-063, 220-SDV-062, 220-SDV-065, 220-SDV-063 turn off automatically, the valves 36r, 36r-1 turn on, Emergency Maintenance of gas pumping units of the Compressor Department-1,2. In case of failure of the gas transportation preparation plant Emergency Maintenance, shut down the CS by pressing the "CS Emergency Kill-Switch" button. In case of the CS Emergency Kill-Switch failure, the shift engineer turns off the adjacent section from the Automated Working Station: turns off the valves 19-3, 19-4. Monitors the valves reversal and notifies the dispatcher and management of the gas compressor service of the accident.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher 2) Report on the scale of the accident 3) Establish warning signs for the protection of the accident site, and security posts if necessary 4) Start accident containment and elimination 5) Implement accident site inspection and notify the manager responsible for accident elimination</p>
<p>2) In case of the CS Emergency Kill-Switch failure, notifies the DM of the Company of the necessity to turn off the valves at the "Nord Stream" diagnostic pig site remotely: SDV-1104, SDV-1103, SDV - 1204, SDV - 1203. Notifies the shift engineer of the gas transportation preparation complex. Reports according to the flow-chart and organizes for the emergency response teams assembly. In case of fire, calls for the fire team of the departmental fire safety service.</p>	<p>Dispatcher, custodial services inspector</p>	
<p>3) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.</p>	<p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial services</p>	
<p>4) Takes measures against unauthorized valves reversal.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p>	
<p>5) Monitors the correct execution of the shutdown procedure of the gas transportation preparation plant.</p>	<p>Shift engineer of the gas transportation preparation complex, processing unit</p>	

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.</p> <p>7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.</p>	<p>operator</p> <p>Processing compressor operator, dispatcher</p> <p>Manager responsible for accident elimination</p>	

Action card No. 12

Initial actions of the gas-compressor service and the involved departments personnel in case of accident
"Rupture of the CS process lines at the section from the outlet valves 8, 8-1, 8-2, 8-3 to valves 21-1, 21-2, 21-3, 21-4, with or without combustion"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>1) Shut down the CS by pressing the "CS Emergency Kill-Switch" button: Emergency shutdown of the gas pumping units of the Compressor Department-1,2, the valves 36r, 36r-1 turn on automatically, the following valves turn off: 7-3u, 7. 1-3u, 7. 2-3u, 7-4u, 7. 1-4u, 7. 2-4u, 20, 20a, 20-1, 20-1a, 20-2, 20-3, 21-1, 21-2, 21-3, 21-4, 81-1, 81-2, the following valves turn on: 1-17, 2-17, 21s-1, 21v-1, 21s-2, 21v-2, 21s-3, 21v-3, 21s-4, 21v-4, 22-1, 22-2, 18, 8b, 8v, 18-1, 8b-1, 8v-1, 18-2, 8b-2, 8v-2, 18-3, 8b-3, 8v-3, 20a-2, 20s-2, 20a-3, 20s-3, 81a-1, 81a-2. In case of the CS Emergency Kill-Switch failure: remotely turn off the valves 19-3, 19-4, 890. 34. 9. Monitor the valves reversal and notify the dispatcher and gas compressor service management of the accident.</p> <p>2) In case of the CS Emergency Kill-Switch failure, turns off the adjacent section – remotely turns off the diagnostic pig site valves SDV-1104, SDV-1103. Notifies the shift engineer of the gas transportation preparation complex. Reports according to the flow-chart and organizes for the emergency response teams assembly. In case of fire, calls for the fire team of the departmental fire safety service.</p> <p>3) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.</p> <p>4) Takes measures against unauthorized valves reversal.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Dispatcher, custodial services inspector</p> <p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial services</p> <p>Gas-pumping unit shift</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
<p>5) Monitors the shutdown of the regeneration lines of the gas transportation preparation plant (shutdown of regeneration furnaces burners).</p> <p>6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.</p> <p>7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.</p>	<p>engineer, processing compressor operator</p> <p>Shift engineer of the gas transportation preparation complex, processing unit operator</p> <p>Processing compressor operator, dispatcher</p> <p>Manager responsible for accident elimination</p>	

Action card No. 13

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the gas pipeline for own needs at the section from the gas preparation plant-1 to the unit modular boiler, ventilation and heating units of the gas pumping units, common incineration complex"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
<p>1) Shut down of the unit modular boiler, ventilation and heating units of the gas pumping units, EKO according to protection scheme "Low fuel gas pressure". Turn off the valve T22. Notify the dispatcher and the gas compressor service management of the accident. Monitor the shutdown of the ventilation and heating units of the gas pumping units.</p> <p>2) Notify the shift engineer of the water and power supply service, report according to the flow-chart, organize for emergency response teams assembly. In case of fire, call for the fire team of the departmental fire safety service.</p> <p>3) Monitors the emergency shutdown of the unit modular boilers.</p> <p>4) Monitors the shutdown of the common incineration complex.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Dispatcher, custodial services inspector</p> <p>Shift engineer of the water and power supply service</p> <p>Shift engineer of the gas transportation preparation complex, processing unit operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>5) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone. Takes measures against unauthorized valves reversal.</p> <p>6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.</p> <p>7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.</p>	<p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial service</p> <p>Processing compressor operator, dispatcher</p> <p>Manager responsible for accident elimination</p>	

Action card No. 14

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the gas pipeline for own needs at the section from gas preparation plant-2 to the unit modular boiler, ventilation and heating units of the gas pumping units, common incineration complex"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>1) Shut down of the unit modular boiler, ventilation and heating units of the gas pumping units according to protection scheme "Low fuel gas pressure". Turn off the valve T11. Notify the dispatcher and the gas compressor service management of the accident. Monitor the shutdown of the ventilation and heating units of the gas pumping units.</p> <p>2) Notify according to the flow-chart, organize for emergency response teams assembly. In case of fire, call for the fire team of the departmental fire safety service.</p> <p>3) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Dispatcher, custodial services inspector</p> <p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial service</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>4) Takes measures against unauthorized valves reversal.</p> <p>5) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.</p> <p>6) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.</p>	<p>Gas-pumping unit shift engineer</p> <p>Processing compressor operator, dispatcher</p> <p>Manager responsible for accident elimination</p>	

Action card No. 15

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the gas pipeline for own needs at the section from the gas preparation plant-1 to the power plant for own needs"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>1) Shutdown of the power plant for own needs according to protection scheme "Low fuel gas pressure". Turn off the valves T20-1, T20. Notify the dispatcher and the gas compressor service management of the accident.</p> <p>2) Notify the shift engineer of the water and power supply service, notify according to the flow-chart, organize for emergency response teams assembly. In case of fire, call for the fire team of the departmental fire safety service.</p> <p>3) Monitors the emergency shutdown of the power plant for own needs units, switches the CS "Portovaya" power supply from the external line.</p> <p>4) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.</p> <p>5) Takes measures against unauthorized valves reversal.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Dispatcher, custodial services inspector</p> <p>Shift engineer of the water and power supply service</p> <p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial service</p> <p>Gas-pumping unit shift engineer, processing</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.	compressor operator	
7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.	Processing compressor operator, dispatcher Manager responsible for accident elimination	

Action card No. 16

Initial actions of the gas-compressor service and the involved departments personnel in case of accident

"Rupture of the gas pipeline for own needs at the section from the gas preparation plant-2 to the power plant for own needs"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
1) Shutdown of the power plant for own needs according to protection scheme "Low fuel gas pressure". Turn off valve T12. Notify the dispatcher and the gas compressor service management of the accident.	Gas-pumping unit shift engineer, processing compressor operator	1) Arrive to the accident site and establish communication with the dispatcher
2) Notify the shift engineer of the water and power supply service, notify according to the flow-chart, organize for emergency response teams assembly. In case of fire, call for the fire team of the departmental fire safety service.	Dispatcher, custodial services inspector	2) Report on the scale of the accident 3) Establish warning signs for the protection of the accident site, and security posts if necessary
3) Monitors the emergency shutdown of the power plant for own needs units, switches the CS "Portovaya" power supply from the external line.	Shift engineer of the water and power supply service	4) Start accident containment and elimination 5) Implement accident site inspection and notify the manager responsible for accident elimination
4) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.	Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial service	
5) Takes measures against unauthorized valves reversal.	Gas-pumping unit shift engineer, processing compressor operator	

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
<p>6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.</p> <p>7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.</p>	<p>Processing compressor operator, dispatcher</p> <p>Manager responsible for accident elimination</p>	

Action card No. 17

Initial actions of the gas-compressor service and the involved departments personnel in case of accident
"Rupture of the fuel gas line in the gas pumping units piping"

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire departments and other departments
<p>1) Shutdown the gas pumping units according to protection scheme "Low fuel gas pressure" or by pressing the Emergency Maintenance button of the gas pumping units. Turn off the hand valve 12-1. Notify the dispatcher and the gas compressor service management of the accident.</p> <p>2) Notify the shift engineer of the water and power supply service and the gas transportation preparation complex, notify according to the flow-chart, organize for emergency response teams assembly. In case of fire, call for the fire team of the departmental fire safety service.</p> <p>3) Monitors the process of the emergency shutdown of the gas pumping units of the CS "Portovaya".</p> <p>4) Notifies by all possible means (loudspeaker communication, telephone and others) the people in the area of the accident, provides for evacuation of all individuals in the accident area (hazard area) not participating in accident elimination. Provides for establishment of security posts at the approach routes (access ways) to the hazard zone.</p> <p>5) Takes measures against unauthorized valves reversal.</p>	<p>Gas-pumping unit shift engineer, processing compressor operator</p> <p>Dispatcher, custodial services inspector</p> <p>Gas-pumping unit shift engineer</p> <p>Dispatcher, gas-pumping unit shift engineer, processing compressor operator, custodial service</p> <p>Gas-pumping unit shift engineer, processing compressor operator</p>	<p>1) Arrive to the accident site and establish communication with the dispatcher</p> <p>2) Report on the scale of the accident</p> <p>3) Establish warning signs for the protection of the accident site, and security posts if necessary</p> <p>4) Start accident containment and elimination</p> <p>5) Implement accident site inspection and notify the manager responsible for accident elimination</p>

Measures for accident elimination and people rescue	Responsible for measures implementation	Actions of the fire department and other departments
6) In case of injuries, first (paramedical) aid is given, ambulance to be called if necessary.	Processing compressor operator, dispatcher	
7) After the branch director (technical director) arrival, accident elimination operations are carried out under his supervision.	Manager responsible for accident elimination	

3. 3. 2 Accident elimination plan at the main gas-pipeline "NEGP– 1,2" (North European Gas Pipeline) at Portovoe Branch

As their primary technology process, these facilities process the natural gas, which is an explosive and inflammable material. Table 21.3 lists the potential accident situations (Rupture s of the linear part of the gas pipeline).

Table 21.3.

List of the potential accident situations (gas pipeline ruptures)

Accident	Elimination measures
Rupture at the section of NEGP– 1 km 771 (valve 771-3) – km 891 (valve 19-3).	Action card No. 1
Rupture at the section of NEGP– 2 km 771 (valve 771-4) – km 893 (valve 19-4).	Action card No. 2

Action card No. 1 Personnel activities

In case of Rupture of the main gas pipeline "North-European Gas Pipeline – 1" at the section km 771 - km 891

Participant	Position	Activities
No. 1	Portovoye branch dispatcher	<p>Localizes the site of the accident by reversal of isolation valves by the TM system. In case of Rupture at the sections:</p> <ol style="list-style-type: none"> 1) km 771-796 – close valve 796-3; close valve 796. 34. 0 (if it was on); 2) km 796-822 – close valve 796-3, valve 822-3; close valve 796. 34. 9 (if it was on); 3) km 822-836 – close valve 822-3, valve 836-3; close valve 836. 34. 0 (if it was on); 4) km 836-860– close valve 836-3, valve 860-3; 860-3r; close valves 836. 34. 9 and 860. 34. 0 (if they were on); 5) km 860-861 – close valve 860-3, valve 861-3, 6) km 860-861 (reserve syphon) – close valve 860-3r, valve 861-3r;

Participant	Position	Activities
		<p>7) km 861-877 – close valve 861-3, valve 861-3p, valve 877-3, close valve 861. 34. 9 (if it was on);</p> <p>8) km 877-891 – close valve 877-3, valve 19-3, valve 890. 12. 0 (if it was on).</p> <p>In case of valves reversal failure, the adjacent section of the main gas pipeline is turned off.</p> <p>In case of the TM system failure, the valves reversal is executed on site, with the participation of the line inspectors or teams of the Portovoye branch personnel.</p> <p>If necessary, instructs the shift engineer of the gas compressor service to connect "to the route" the gas pumping units pumping to the "ring", notifying the shift engineer of the gas transportation preparation complex.</p> <p>Reports the accident to the no. 5 and reports according to the reporting flow-chart.</p>
No. 2	Portovoye branch management: Director, Technical Director.	Announces the call for the personnel according to the list of professionals and workers to be engaged in accidents elimination, and assembles and directs the work teams for accidents elimination.
No. 3	Line inspector (822 km)	<p>At the instruction of the No. 1, arrives to the designated valve station. In case of the TM system failure, turns off the line valve. In case of Rupture at the sections:</p> <p>1) km 796-822 – close valve 822-3;</p> <p>2) km 822-836 – close valve 822-3.</p> <p>Takes measures for exclusion of wrong or spontaneous turning on of the valves.</p> <p>Reports to the No. 1 on the executed actions and performs other instructions.</p>
No. 4	Line inspector (877 km)	<p>At the instruction of the No. 1, arrives to the designated valve station. In case of the TM system failure, turns off the line valve. In case of Rupture at the sections:</p> <p>1) km 861-877 – close valve 877-3;</p> <p>2) km 877-891 – close valve 877-3.</p> <p>Takes measures for exclusion of wrong or spontaneous turning on of the valves.</p> <p>Reports to the No. 1 on the executed actions and performs other instructions.</p>
No. 5	The Portovoye branch teams	<p>At the direction of the No. 1 arrive to the designated valve station. Examine the actual position of the Line Valve isolation valves shutters and ridges. Report to No. 1 on the actual position of valves. In case of the TM system failure, turn off the line valve, close the ridges, in case of a Rupture at the sections:</p> <p>1) km 771-796 – turn off valve 796-3; turn off valve 796. 34. 0 (if it was on);</p> <p>2) km 796-822 – turn off valve 796-3, valve 822-3; turn off valve 796. 34. 9 (if it was on);</p> <p>3) km 822-836 – turn off valve 822-3, valve 836-3; turn off valve 836. 34. 0 (if it was on);</p> <p>close valve no. 1 (Du 50), gas supply production valve for RP – 10 at the side of the emergency gas pipeline at the valve station valve 836 km;</p> <p>4) km 836-860 – turn off valve 836-3, valve 860-3; 860-3r; turn off valve 836. 34. 9 and 860.</p>

Participant	Position	Activities
		<p>34. 0 (if they were on); turn off the valves of Du 50 of the gas supply production valve for RP -10 at the side of the emergency gas pipeline at the valve station valve 836 km (valve no. 3) and at the valve station valve 860 km (valve no. 1);</p> <p>5) km 860-861 – turn off valve 860-3, valve 861-3, turn off valve no. 3 (Du 50) of the gas supply production valve for RP – 10 at the side of the emergency gas pipeline at the valve station valve 860 km;</p> <p>6) km 860-861 (reserve syphon) – turn off valve 860-3r, valve 861-3r;</p> <p>7) km 861-877 – turn off valve 861-3, valve 861-3p, valve 877-3, turn off valve 861. 34. 9 (if it was on);</p> <p>km 877-891 – turn off valve 877-3, valve 19-3, valve 890. 12. 0 (if it was on).</p> <p>After the isolation valves reversal, take measures for exclusion of wrong or spontaneous turning on of the valves.</p> <p>Report to the No. 1, No. 2 on the actions executed.</p>

Action card No. 2

Personnel activities

In case of Rupture of the main gas pipeline "North-European Gas Pipeline – 1" at the section km 771- km 891

Participant	Position	Activities
No. 1	Portovoye branch dispatcher	<p>Localizes the site of the accident by reversal of isolation valves by the TM system. In case of Rupture at the sections:</p> <ol style="list-style-type: none"> 1) km 771-799 – close valve 799-4; close valve 796. 34. 0 (if it was on); 2) km 799-824 – close valve 799-4, valve 824-4; close valve 796. 34. 9 (if it was on); 3) km 824-838 – turn off valve 824-4, valve 838-4; turn off valve 836. 34. 0 (if it was on); 4) km 838-863 – turn off valve 838-4, valve 863-4; 860-3r; turn off valves 836. 34. 9 and 860. 34. 0 (if they were on); 5) km 863-864 – close valve 863-4, valve 864-4, 6) km 864-880 (reserve syphon) – turn off valve 864-4p, valve 880-4, turn off valve 861. 34. 9 (if it was on); 7) km 880-893– turn off valve 880-4, valve 19-4, valve 861. 34. 9 (if it was on); <p>In case of valves reversal failure, the adjacent section of the main gas pipeline is turned off.</p> <p>In case of the TM system failure, the valves reversal is executed on site, with the participation of the line inspectors or teams of the Portovoye branch personnel.</p> <p>If necessary, instructs the shift engineer of the gas compressor service to connect to the “ring” the gas pumping units pumping “to the route”, notifying the shift engineer of the gas</p>

Participant	Position	Activities
No. 2	Portovoye branch management: Director, Technical Director.	transportation preparation complex. Reports the accident to the no. 5 and reports according to the reporting flow-chart. Announces the call for the personnel according to the list of professionals and workers to be engaged in accidents elimination, and assembles and directs the work teams for accidents elimination.
No. 3	Line inspector (822 km)	At the instruction of the No. 1, arrives to the designated valve station. In case of the TM system failure, turns off the line valve. In case of Rupture at the sections: 1) km 799-824 – close valve 824-4; 2) km 824-838 – close valve 824-4. Takes measures for exclusion of wrong or spontaneous turning on of the valves. Reports to the No. 1 on the executed actions and performs other instructions.
No. 4	Line inspector (877 km)	At the instruction of the No. 1, arrives to the designated valve station. In case of the TM system failure, turns off the line valve. In case of Rupture at the sections: 1) km 864-880 – close valve 880-4; 2) km 880-893 – close valve 880-43. Takes measures for exclusion of wrong or spontaneous turning on of the valves. Reports to the No. 1 on the executed actions and performs other instructions.
No. 5	The Portovoye branch teams	At the instruction of the No. 1, arrive to the valve station. Examine the actual position of the LK isolation valves shutters and ridges. Report to No. 1 on the actual position of valves. In case of the TM system failure, turn off the line valve, close the ridges, in case of a Rupture at the sections: 1) km 771-799 – turn off valve 799-4; turn off valve 796. 34. 0 (if it was on); 2) km 799-824 – turn off valve 799-4, valve 824-4; turn off valve 796. 34. 9 (if it was on); 3) km 824-838 – turn off valve 824-4, valve 838-4; turn off valve 836. 34. 0 (if it was on); 4) km 838-863 – turn off valve 838-4, valve 863-4; turn off valves 836. 34. 9 and 860. 34. 0 (if they were on); 5) km 863-864 – turn off valve 863-4, valve 8641-4, 6) km 864-880 – turn off valve 864-4, valve 880-4, turn off valve 861. 34. 9 (if it was on); 7) km 880-893 – turn off valve 880-4, valve 19-4, valve 890. 12. 0 (if it was on). After the isolation valves reversal, take measures for exclusion of wrong or spontaneous turning on of the valves. Report to the No. 1, No. 2 on the actions executed.

3.4 Emergency response plan in Severnoe Branch

3.4.1 Emergency response plan for the linear section of North-European gas pipeline at Severnoe LPMMPPL.

Emergency response plan for the linear section of North-European gas pipeline within operation responsibility of Severnoe LPMMPPL is provided in Table 21.4

Table 21.4.

Emergency response plan in Severnoe Branch for the linear section of North-European gas pipeline

ACTION CARD № 34

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 596-3 (596,3 km) and № 623-3 (622,9 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation) "

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Reports to Dispatcher office of the Society and to the Dispatcher of LPMMPPL Volkhovskoe about pressure drop and the need to close valves № 596-3; 596. 34. 9; 596. 31. 9; 596. 31. 9P and organization of security post at valves station № 596-3 (596,3 km). 2. Shuts off the respective section by remote closing of valves № 623. 34. 0; 623-3. 3. Activates the emergency and accidents alerting procedure. 4. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 5. Informs the local self-regulatory bodies and EMERCOM. 6. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	<p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.</p>
Branch Management	<p>As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.</p>
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.

Position	Actions
Accident containment team №1	<ol style="list-style-type: none"> Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 623. 34. 0; 623-3. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2,3	<ol style="list-style-type: none"> Arrives to emergency site. Runs the hose from water truck. Starts fire fighting by water at the adjacent area. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> Organizes investigation of the accident site and evacuation of personnel if needed. Arranges security protection of the accident site. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> Reports upon arrival to the responsible ER manager; Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; Provides first aid to the possible injured persons; Estimates the condition of air, borders and direction of gassed zone spreading; Puts out the posts; Performs the continuous control of air condition; Performs the gas dangerous works and gas rescue operations; Implements actions for accident containment and elimination.

ACTION CARD № 35

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 623-3 (622,9 km) and № 632-3 (631,8 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation) "

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 623-3; 623. 34. 9; 632-3. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. Informs the local self-regulatory bodies and EMERCOM. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident

Position	Actions
	containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 623-3; 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 632-3. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition;

Position	Actions
	7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 36

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment
"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 632-3 (631,8 km) and № 655-3 (654,9 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation) "

Position	Actions
DS dispatcher	1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 632-3; 655. 34. 0; 655-3. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations. Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Duty Bus Driver	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Branch Management	1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 632-3. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 655. 34. 0; 655-3. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.

Position	Actions
Accident containment team №3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 37

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 655-3 (654,9 km) and № 684-3 (683,5 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation) "

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 655-3; 655. 34. 9; 684. 34. 0; 684-3. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.

Position	Actions
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 655-3; 655. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 684-3. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations;

Position	Actions
	8. Implements actions for accident containment and elimination.

ACTION CARD № 38

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment
"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 684-3 (683,5 km) and № 19-3 (712,6 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation) "

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 684-3; 684. 34. 9; 713. 34. 0; 19-3. 2. Reports to the Branch Mangement, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations. <p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.</p>
Duty Bus Driver	<p>As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.</p>
Branch Management	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 684-3; 684. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 713. 34. 0; 19-3. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck.

№3	<ol style="list-style-type: none"> 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 39

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 19-3 (712,6 km) and № 20-3 (714 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation) "

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 19-3; 713. 34. 9; 714-3KII; 20-3; 7a-3, sends ER teams of Linear O&M service Dpt and GCS "Elizavetinskaya" to shutoff valves for hand reset if needed. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	<p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.</p> <p>As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.</p>
Branch Management	
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it

Position	Actions
<p>Head of GCS "Елизаветинская "</p>	<p>approved by the ER manager. 5. Follows the directions of ER manager. 1. Notifies and gathers the ER teams of GCS. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 4. Follows the directions of ER manager.</p>
<p>Accident containment team №1</p>	<p>1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 19-3; 713. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.</p>
<p>Accident containment team ГКС "Елизаветинская "</p>	<p>1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 20-3; 7a-3; 714-3КП. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.</p>
<p>Accident containment team №2,3</p>	<p>1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.</p>
<p>Head of Security Service Dpt.</p>	<p>1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.</p>
<p>"ASF "Safety Service" Ltd</p>	<p>1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.</p>

ACTION CARD № 40

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 20-3 (714 km) and № 21-3 (715,7 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation) "

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 21-3; 716. 34. 0; 714-3К3; 20-3; 8-3, sends ER teams of Linear O&M service Dpt and GCS "Elizavetinskaya" to shutoff valves for hand reset if needed. 2. Reports to the Branch Mangement, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Head of GCS «Елизавелинская»	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of GCS. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 4. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 21-3; 716. 34. 0. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team ГКС "Елизавелинская"	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 714-3К3; 20-3; 8-3. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.

Position	Actions
Accident containment team №2,3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 41

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment
"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 21-3 (715,7 km) and № 742-3 (741,7 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation) "

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 21-3; 716. 34. 9; 742. 34. 0; 742-3. 2. Reports to the Branch Mangement, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.

Position	Actions
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 21-3; 716. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 742. 34. 0; 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 42

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 742-3 (741,7 km) u 771-3 (770,9 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 742-3; 742. 34. 9; 771. 34. 0; 771-3. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 742-3; 742. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 771. 34. 0; 771-3. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation.

Position	Actions
Head of Security Service Dpt.	<ol style="list-style-type: none"> 5. Follows orders of team foreman depending on a situation. 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 43

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment
"Rupture at the main gas pipeline section of "North-European GP I" between valve sites № 771-3 (770,9 km) and № 796-3 (796,5 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Reports to Dispatcher office of the Society and to the Dispatcher of LPMMPL Portovoe about pressure drop and the need to close valves № 796-3; 796. 34. 0 and organization of security post at valves station № 796-3 (796,5 km). 2. Shuts off the respective section by remote closing of valves № 771-3; 771. 34. 9. 3. Activates the emergency and accidents alerting procedure. 4. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 5. Informs the local self-regulatory bodies and EMERCOM. 6. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear	1. Notifies and gathers the ER teams of Linear O&M service Dpt.

Position	Actions
O&M Service	<ol style="list-style-type: none"> Defines the structure of teams, posts and their positioning at valve stations. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 771-3; 771. 34. 9. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2,3	<ol style="list-style-type: none"> Arrives to emergency site. Runs the hose from water truck. Starts fire fighting by water at the adjacent area. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> Organizes investigation of the accident site and evacuation of personnel if needed. Arranges security protection of the accident site. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> Reports upon arrival to the responsible ER manager; Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; Provides first aid to the possible injured persons; Estimates the condition of air, borders and direction of gassed zone spreading; Puts out the posts; Performs the continuous control of air condition; Performs the gas dangerous works and gas rescue operations; Implements actions for accident containment and elimination.

ACTION CARD № 44

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 598-4 (598,4 km) and № 623-4 (622,9 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> Reports to Dispatcher office of the Society and to the Dispatcher of LPMPL Volkhovskoe about pressure drop and the need to close

Position	Actions
	<p>valves № 598-4; 598. 34. 9 and organization of security post at valves station № 598-4 (598,4 km).</p> <ol style="list-style-type: none"> 2. Shuts off the respective section by remote closing of valves № 623-4; 623. 34. 0. 3. Activates the emergency and accidents alerting procedure. 4. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 5. Informs the local self-regulatory bodies and EMERCOM. 6. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 623-4; 623. 34. 0. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2,3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts;

Position	Actions
	<ol style="list-style-type: none"> 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 45

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment
"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 623-4 (622,9 km) and № 632 (631,8 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)."

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 623-4; 623. 34. 9; 632-4. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 623-4; 623. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 632-4. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident	<ol style="list-style-type: none"> 1. Arrives to emergency site.

Position	Actions
containment team №3	<ol style="list-style-type: none"> 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
«ASF «Safety Service» Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 46

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment
"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 632-4 (631,8 km) and № 655-4 (654,9 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 632-4; 655. 34. 0; 655-4. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear	1. Notifies and gathers the ER teams of Linear O&M service Dpt.

Position	Actions
O&M Service	<ol style="list-style-type: none"> 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 632-4. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 655. 34. 0; 655-4. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 47

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment
"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 654-9 km) and № 684-4 (683,5 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 655-4; 655. 34. 9; 684. 34. 0; 684-4. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accident alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	<p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.</p>
Branch Management	<p>As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.</p>
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 655-4; 655. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 684. 34. 0; 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site.

Position	Actions
"ASF "Safety Service" Ltd	<p>3. Arranges interaction with law enforcement authorities.</p> <ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 48

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 684-4 (683,5 km) u 19-4 (712,6 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 684-4; 684. 34. 9; 713. 34. 0; 19-4. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations. <p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.</p>
Duty Bus Driver	<p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.</p>
Branch Management	<p>As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.</p>
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed).

Position	Actions
	<p>4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager.</p> <p>5. Follows the directions of ER manager.</p>
Accident containment team №1	<p>1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 684-4; 684. 34. 9.</p> <p>2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.</p>
Accident containment team №2	<p>1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 713. 34. 0; 19-4.</p> <p>2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.</p>
Accident containment team №3	<p>1. Arrives to emergency site.</p> <p>2. Runs the hose from water truck.</p> <p>3. Starts fire fighting by water at the adjacent area.</p> <p>4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation.</p> <p>5. Follows orders of team foreman depending on a situation.</p>
Head of Security Service Dpt.	<p>1. Organizes investigation of the accident site and evacuation of personnel if needed.</p> <p>2. Arranges security protection of the accident site.</p> <p>3. Arranges interaction with law enforcement authorities.</p>
"ASF "Safety Service" Ltd	<p>1. Reports upon arrival to the responsible ER manager;</p> <p>2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations;</p> <p>3. Provides first aid to the possible injured persons;</p> <p>4. Estimates the condition of air, borders and direction of gassed zone spreading;</p> <p>5. Puts out the posts;</p> <p>6. Performs the continuous control of air condition;</p> <p>7. Performs the gas dangerous works and gas rescue operations;</p> <p>8. Implements actions for accident containment and elimination.</p>

ACTION CARD № 49

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 19-4 (712,6 km) and № 20-4 (714 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 19-4; 713. 34. 9; 714-4КП; 20-3; 7а-4, направляет аварийную бригаду ЛЭС и ГКС «Елизаветинская» к отключающей запорной арматуре для перестановки в ручную if needed. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Head of GCS "Елизаветинская"	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of GCS. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 4. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 19-4; 713. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team ГКС "Елизаветинская"	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 20-4; 7а-4; 714-4КП. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident	<ol style="list-style-type: none"> 1. Arrives to emergency site.

Position	Actions
containment team №2,3	<ol style="list-style-type: none"> 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 50

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 20-4 (714 km) and № 21-4 (715,7 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 21-4; 716. 34. 0; 714-4К3; 20-4; 8-4, направляет аварийную бригаду ЛЭС и ГКС «Елизаветинская» к отключающей запорной арматуре для перестановки в ручную if needed. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver	Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.
Branch Management	As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.

Position	Actions
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Head of GCS "Елизаветинская"	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of GCS. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 4. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 21-4; 716, 34, 0. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team ГКС "Елизаветинская"	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 714-4К3; 20-4; 8-4. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2,3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations;

Position	Actions
	8. Implements actions for accident containment and elimination.

ACTION CARD № 51

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment
"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 21-4 (715,7 km) and № 742-4 (741,7 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<ol style="list-style-type: none"> 1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 21-4; 716. 34. 9; 742. 34. 0; 742-4. 2. Reports to the Branch Management, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure. 3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 4. Informs the local self-regulatory bodies and EMERCOM. 5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver Branch Management	<p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams. As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.</p>
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 21-4; 716. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 742-4. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation.

Position	Actions
Head of Security Service Dpt.	<p>5. Follows orders of team foreman depending on a situation.</p> <p>1. Organizes investigation of the accident site and evacuation of personnel if needed.</p> <p>2. Arranges security protection of the accident site.</p> <p>3. Arranges interaction with law enforcement authorities.</p>
"ASF "Safety Service" Ltd	<p>1. Reports upon arrival to the responsible ER manager;</p> <p>2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations;</p> <p>3. Provides first aid to the possible injured persons;</p> <p>4. Estimates the condition of air, borders and direction of gassed zone spreading;</p> <p>5. Puts out the posts;</p> <p>6. Performs the continuous control of air condition;</p> <p>7. Performs the gas dangerous works and gas rescue operations;</p> <p>8. Implements actions for accident containment and elimination.</p>

ACTION CARD № 52

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 742-4 (741,7 km) and № 771-4 (770,9 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)"

Position	Actions
DS dispatcher	<p>1. Detects the emergency section of main gas pipeline and Shuts off the respective section by remote closing of valves № 742-4; 742. 34. 9; 771. 34. 0; 771-4.</p> <p>2. Reports to the Branch Mangement, Dispatcher office of the Society and Activates the emergency and accidents alerting procedure.</p> <p>3. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers.</p> <p>4. Informs the local self-regulatory bodies and EMERCOM.</p> <p>5. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.</p>
Duty Bus Driver Branch Management	<p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.</p> <p>As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.</p>
Head of Linear O&M Service	<p>1. Notifies and gathers the ER teams of Linear O&M service Dpt.</p> <p>2. Defines the structure of teams, posts and their positioning at valve stations.</p> <p>3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed).</p> <p>4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it</p>

Position	Actions
	approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 742-4; 742. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2	1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 771. 34. 0; 771-4. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №3	1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

ACTION CARD № 53

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

"Rupture at the main gas pipeline section of "North-European GP II" between valve sites № 771-4 (770,9 km) and № 799-4 (798,7 km) with methane emission to atmospheric air and gas inflammation (without gas inflammation)."

Position	Actions
DS dispatcher	1. Reports to Dispatcher office of the Society and to the Dispatcher of LPDMP Portovoe about pressure drop and the need to close valves № 799-4; 796. 34. 0 and organization of security post at valves station № 799-4 (798,7 km). 2. Shuts off the respective section by remote closing of valves № 771-3; 771. 34. 9.

Position	Actions
	<ol style="list-style-type: none"> 3. Activates the emergency and accidents alerting procedure. 4. Implements necessary measures to arrange the maximum possible in emergency situation gas supply to the consumers. 5. Informs the local self-regulatory bodies and EMERCOM. 6. Until the Branch management and Linear O&M service manager arrive, manages the arrived emergency LOM teams and accident containment operations.
Duty Bus Driver Branch Management	<p>Reports readiness to dispatcher and following dispatcher's orders drives on route to gather up the emergency teams.</p> <p>As soon as information from Dispatcher received, arrives to CS and manages the accident containment and elimination.</p>
Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Notifies and gathers the ER teams of Linear O&M service Dpt. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparation and arrival of ER teams to assumed accident site and to close valves at emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
Accident containment team №1	<ol style="list-style-type: none"> 1. Following orders of operations manager (dispatcher) shuts off, if needed, the emergency section by manual closing of valves № 771-3; 771. 34. 9. 2. Reports to operations manager (dispatcher) about valves closure and follows further instructions.
Accident containment team №2,3	<ol style="list-style-type: none"> 1. Arrives to emergency site. 2. Runs the hose from water truck. 3. Starts fire fighting by water at the adjacent area. 4. Uses fire extinguishers, sand, fire blankets and other tools, depending on situation. 5. Follows orders of team foreman depending on a situation.
Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Organizes investigation of the accident site and evacuation of personnel if needed. 2. Arranges security protection of the accident site. 3. Arranges interaction with law enforcement authorities.
"ASF "Safety Service" Ltd	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations; 8. Implements actions for accident containment and elimination.

3.4.2 Emergency Responce Plant at CS «Elizavetinskaya»

List of potential emergency situations at CS «Elizavetinskaya» provided in Table 21.5.

Table 21.5.

List of potential emergency situations at CS «Elizavetinskaya»

ite m №	Site name (km)	Card Number
1.	Rupture of HP gas pipeline at the RoW and/or at junction point of compressor department CD-1 (CD-2) between valves № 19, 7a, 20 with gas inflammation.	01
2.	Rupture of HP gas pipeline at the RoW and/or at junction point of compressor department CD-1 (CD-2) between valves № 19, 20, 7a without gas inflammation.	02
3.	Rupture of HP gas pipeline at the RoW and/or at junction point of compressor department CD-1 (CD-2) between valves № 8, 20, 21 with gas inflammation.	03
4.	Rupture of HP gas pipeline at the RoW and/or at junction point of compressor department CD-1 (CD-2) between valves № 8, 20, 21 without gas inflammation.	04
5.	Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– input (output) manifold with gas inflammation.	05
6.	Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– input (output) manifold without gas inflammation.	06
7.	Rupture of HP gas pipeline of interdepartmental connection lines between valves № 41-3 (42-3) and 41-4 (42-4) with gas inflammation.	07
8.	Rupture of HP gas pipeline of of interdepartmental connection lines between valves № 41-3 (42-3) and 41-4 (42-4) without gas inflammation.	08
9.	Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– process loop of GPU between valves № 1, 2 with gas inflammation.	09
10.	Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– process loop of GPU between valves № 1, 2 without gas inflammation.	10
11.	Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– impulse gas supply pipeline with inflammation.	11
12.	Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– impulse gas supply pipeline	12

	without inflammation.	
13.	Rupture of LP gas pipeline at the territory of compressor department CD-1 (CD-2)– gas pipeline of own needs with inflammation.	13
14.	Rupture of LP gas pipeline at the territory of compressor department CD-1 (CD-2)– gas pipeline of own needs without inflammation.	14
15.	Fire in PEB (Operation Room)	15
16.	Fire in oil storage room	16
17.	Fire in block-type boiler-house	17
18.	Fire in Power substation 35/10 kV	18
19.	Fire in power unit of CD-2	19
20.	Fire at ADES (diesel-power station)	20
21.	Emergency power shutdown	21
22.	Rupture of heat supply pipeline (in winter season)	22
23.	Close-down of communication means of fiber-optic line equipment	23
24.	Close-down of communication means of digital radio-relay equipment	24
25.	Rupture of pipeline of artesian well container piping	25

Emergency Response Plant at CS «Elizavetinskaya» provided in Table 21.6.

Table 21.6.

Emergency Response Plant at CS «Elizavetinskaya».

ACTION CARD № 01

Actions of CS personnel and workers of subdivisions involved

in emergency response to accident «*Rupture of HP gas pipeline at the RoW and/or at junction point of compressor department CD-1 (CD-2) between valves № 19, 7a, 20 with gas inflammation*».

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Establishes the cause of steep pressure drop at CS input • In case the rupture of gas pipeline is revealed before valve № 20, closes safety valve № 19 using line telemechanics system • Informs dispatcher of Severnoe LPMPL, head of IFFS, head of GCS and further following the alarm plan • Announces using «public address system» about evacuation from GCS territory for all persons and equipment that are not involved in emergency response actions. • Controls the emergency shut-down of CD from ACS. In case of necessity shuts the CD manually using AOSS button.

	<ul style="list-style-type: none"> • Controls the valve position changing. Valves: №7, 7a; 8, 20; 1; 2; 6; 36; 36p. 1 – should be closed, №5; 9; 14, 17; 18 should be opened. In case of necessity, valves are operated manually. • Arranges all activities related to evacuation of persons, equipment, shut-down of GCS and fire-fighting until head of GCS arrives. • When fire is extinguished, provides uninterrupted gas transport depending on situation, by increasing load on the second compressor department. • Informs LPMMPL management and LPMMPL dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> • Informs Shift Engineer. Follows instructions of Shift Engineer. • Checks the correctness of GPU shutdown and position change of valves. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. • Upon completion of valve position changes and GPU shutdowns, starts fire fighting using emergency fire fighting equipment, with strict compliance with safety requirements. When moving around on site, keeps at windward site and at a safety distance from area under fire.
Severnøe LPMMPL Dispatcher	<ul style="list-style-type: none"> • Initiates Severnøe LPMMPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnøe LPMMPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPMMPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPLs about all changes to valve positions. • Controls position change of main gas pipeline valves. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Squad leader IFFS (Fire Brigade) (on duty)	<ul style="list-style-type: none"> • Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak. • Makes arrangements to reconnaissance the accident site. • Switches on the manual fire annunciator and pressure-holding pumps. • Defines the movement order and location of fire truck with taking into consideration the wind direction. • In case of necessity gets a permit to perform fire-fighting in the electrical installations. • Watches over the safety of people working at fire outbreak site. • Controls fire-fighting process. • Supervises actions of volunteer fire brigade. • Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. • Operates fire water monitor (master stream nozzle). • Reports to Shift Engineer about elimination of fire outbreak.
Division of NWISD (Security)	<ul style="list-style-type: none"> • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact.

(shift leader)	<ul style="list-style-type: none"> ● Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders). ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation. ● Drives emergency team to the safety valve, if needed. ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Driver on duty	
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services. ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel. ● Takes care about evacuation of people from dangerous zone ● Arrives to operator room following orders of Shift Engineer ● Comes under command of leader of IFFS division ● Performs accident containment under orders of leader of IFFS division ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts; ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination.
Head of CP,	
Head of NWISD Division	
Emergency elimination (containment) brigade	
Volunteer fire brigade (VFB)	
«ASF «Safety Service» Ltd	

ACTION CARD № 02

Actions of CS personnel and employees of subdivisions involved
in emergency response to accident «*Rupture of HP gas pipeline at the RoW and/or at junction point of compressor department CD-1 (CD-2) between valves № 19, 20, 7a without gas inflammation.*».

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Establishes the cause of steep pressure drop at CS input • In case the rupture of gas pipeline is revealed before valve № 20, closes safety valve № 19 using line telemechanics system • Informs dispatcher of Severnoe LPMMPPL, head of CS and further following the alarm plan. • Announces using «public address system» about evacuation from CD territory for all persons and equipment that are not involved in emergency response actions. • Controls the emergency shut-down of CD from ACS. In case of necessity shuts the CD manually using AOSS button. • Controls the valve position changing. Valves: №7, 7a; 8, 20; 1; 2; 6; 36; 36p. 1 – should be closed, №5; 9; 14 should be opened. In case of necessity, valves are operated manually. • Arranges all activities related to evacuation of persons, equipment, shut-down of CS until head of GCS arrives. • When fire is extinguished, provides uninterrupted gas transport depending on situation, by increasing load on the second compressor department. • Informs LPMMPPL management and LPMMPPL dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> • Informs Shift Engineer. Follows instructions of Shift Engineer. • Checks the correctness of GPU shutdown and position change of valves. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control.
Severnoe LPMMPPL Dispatcher	<ul style="list-style-type: none"> • Initiates Severnoe LPMMPPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPMMPPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPPLs about all changes to valve positions. • Controls position change of main gas pipeline valves. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrains vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed.

	<ul style="list-style-type: none"> • Meets the fire brigades arriving to CS. • Arranges CS security on the external perimeter (following management orders).
Driver on duty	<ul style="list-style-type: none"> • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation. • Drives emergency team to the safety valve, if needed.
Head of GCS, head of CSD	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency. • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services.
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone
«ASF «Safety Service» Ltd	<ul style="list-style-type: none"> • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.

ACTION CARD № 03

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident «Rupture of HP gas pipeline at the RoW and/or at junction point of compressor department CD-1 (CD-2) between valves № 8, 20, 21 with gas inflammation.»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Establishes the cause of steep pressure drop at CS output • In case the rupture of gas pipeline is revealed after valve № 20, closes safety valve №21 using line telemechanics system • Informs dispatcher of Severnoe LPMMPЛ, leader of IFFS division, head of GCS and further following the alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Controls the emergency shut-down of CD from ACS. In case of necessity shuts the CD manually using AOSS button. • Controls the valve position changing. Valves: №7, 7a; 8, 20; 1; 2; 6; 36; 36p; 36p. 1 – should be closed, №5; 9; 14, 17; 18 should be opened. In case of necessity, valves are operated manually. • Arranges all activities related to evacuation of persons, equipment, shut-down of CS and fire-fighting until head of CS arrives. • When fire is extinguished, provides uninterrupted gas transport depending on situation, by increasing load on the second compressor department. • Informs LPMMPЛ management and LPMMPЛ dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> • Informs Shift Engineer. Follows instructions of Shift Engineer. • Checks the correctness of GPU shutdown and position change of valves. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. • Upon completion of valve position changes and GPU shutdowns, starts fire fighting using emergency fire fighting equipment, with strict compliance with safety requirements. When moving around on site, keeps at winward site and at a safety distance from area under fire.
Severnoe LPMMPЛ Dispatcher	<ul style="list-style-type: none"> • Initiates Severnoe LPMMPЛ system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPЛ facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPMMPЛ, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPЛs about all changes to valve positions. • Controls position change of main gas pipeline valves. • Supervises the process of containment and elimination of emergency until Branch Management arrives.

Squad leader IFFS (on duty)	<ul style="list-style-type: none"> ● Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak. ● Switches on the manual fire annunciator and pressure-holding pumps. ● Defines the movement order and location of fire truck with taking into consideration the wind direction. ● In case of necessity gets a permit to perform fire-fighting in the electrical installations. ● Makes arrangements to reconnaissance the accident site. ● Watches over the safety of people working at fire outbreak site. ● Controls fire-fighting process. ● Supervises actions of volunteer fire brigade. ● Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. ● Operates fire water monitor (master stream nozzle). ● Reports to Shift Engineer about elimination of fire outbreak.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders).
Driver on duty	<ul style="list-style-type: none"> ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation. ● Drives emergency team to the safety valve, if needed.
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services.
Emergency elimination	<ul style="list-style-type: none"> ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel.

(containment) brigade	<ul style="list-style-type: none"> • Takes care about evacuation of people from dangerous zone
Volunteer fire brigade (VFB)	<ul style="list-style-type: none"> • Arrives to operator room following orders of Shift Engineer • Comes under command of leader of IFFS division • Performs accident containment under orders of leader of IFFS division • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.
«ASF «Safety Service» Ltd	

ACTION CARD № 04

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident *«Rupture of HP gas pipeline at the RoW and/or at junction point of compressor department CD-1 (CD-2) between valves № 8, 20, 21 without gas inflammation».*

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Establishes the cause of steep pressure drop at CS output • In case the rupture of gas pipeline is revealed after valve № 20, closes safety valve №21 using line telemechanics system • Informs dispatcher of Severnoe LPMPL, head of CS and further following the alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Controls the emergency shut-down of CD from ACS. In case of necessity shuts the CD manually using AOSS button. • Controls the valve position changing. Valves: №7, 7a; 8; 20; 1; 2; 6; 36; 36p. 1 – should be closed, №5; 9; 14 should be opened. In case of necessity, valves are operated manually. • Arranges all activities related to evacuation of persons, equipment, shut-down of CS until head of GCS arrives. • When fire is extinguished, provides uninterrupted gas transport depending on situation, by increasing load on the

	<p>second compressor department.</p> <ul style="list-style-type: none"> • Informs LPMMPPL management and LPMMPPL dispatcher about all valve position changes implemented. • Informs Shift Engineer. Follows instructions of Shift Engineer. • Checks the correctness of GPU shutdown and position change of valves. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. • Initiates Severnoe LPMMPPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPMMPPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPPLs about all changes to valve positions. • Controls position change of main gas pipeline valves. • Supervises the process of containment and elimination of emergency until Branch Management arrives. • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed. • Meets the fire brigades arriving to CS. • Arranges CS security on the external perimeter (following management orders). • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation. • Drives emergency team to the safety valve, if needed. • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency. • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences. • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services. • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel.
Operator on duty	
Severnoe LPMMPPL Dispatcher	
Division of NWISD (Security) (shift leader)	
Driver on duty	
Head of GCS, head of CSD	
Head of CP,	
Head of NWISD Division	
Emergency elimination (containment)	

brigade	<ul style="list-style-type: none"> • Takes care about evacuation of people from dangerous zone
«ASF «Safety Service» Ltd	<ul style="list-style-type: none"> • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.

ACTION CARD № 05

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident «Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– input (output) manifold with gas inflammation»

Position of employee CS Shift Engineer «Elizavetinskaya»	<p>Actions of employee</p> <ul style="list-style-type: none"> • Infoms dispatcher of Severmoe LPMMP, leader of IFFS division, head of GCS and further following the alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Controls the emergency shut-down of CD from ACS. In case of necessity shuts the CD manually using AOSS button. • Controls the valve position changing. Valves: №7, 7a; 8, 20; 1; 2; 6; 36; 36p; 36p. 1 – should be closed, №5; 9; 14, 17; 18 should be opened. In case of necessity, valves are operated manually. • Ensures safe operation of second compressor department by closing interdepartmental connection lines 41-3, 41-4, 42-3, 42-4 and bleeding gas between them via the valve 41-3. 3 • In case there is a danger that fire can catch the neighbor sites, performs the emergency bleeding of gas from sites endangered by fire • Shuts down power supply to the consumers on fire. Issues permit for fire fighting in the electric installations to the leader of IFFS team. • Arranges all activities related to evacuation of persons, equipment, shut-down of CS and fire-fighting until head of CS arrives. • When fire is extinguished, provides uninterrupted gas transport depending on situation, by increasing load on the
---	---

	<p>second compressor department.</p> <ul style="list-style-type: none"> • Informs LPMMPL management and LPMMPL dispatcher about all valve position changes implemented. • Informs Shift Engineer. Follows instructions of Shift Engineer. • Checks the correctness of GPU shutdown and position change of valves CD. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. • Following orders of Shift Engineer performs bleeding of gas from interdepartmental connection lines by opening valve 41-3. 3 from local control panel. • Upon completion of valve position changes and GPU shutdowns, starts fire fighting using emergency fire fighting equipment, with strict compliance with safety requirements. When moving around on site, keeps at windward site and at a safety distance from area under fire.
Operator on duty	<ul style="list-style-type: none"> • Initiates Severnue LPMMPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnue LPMMPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPMMPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPLs about all changes to valve positions. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Severnue LPMMPL Dispatcher	<ul style="list-style-type: none"> • Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak. • Switches on the manual fire annunciator and pressure-holding pumps. • Defines the movement order and location of fire truck with taking into consideration the wind direction. • Arranges water curtain to cool the equipment located in close proximity to fire hazard. • In case of necessity gets a permit to perform fire-fighting in the electrical installations. • Makes arrangements to reconnaissance the accident site. • Watches over the safety of people working at fire outbreak site. • Controls fire-fighting process. • Supervises actions of volunteer fire brigade. • Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. • Operates fire water monitor (master stream nozzle). • Reports to Shift Engineer about elimination of fire outbreak.
Squad leader IFFS (on duty)	<ul style="list-style-type: none"> • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed. • Meets the fire brigades arriving to CS.
Division of NWISD (Security) (shift leader)	

	<ul style="list-style-type: none"> ● Arranges CS security on the external perimeter (following management orders). ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation. ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Driver on duty	
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel. ● Takes care about evacuation of people from dangerous zone
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> ● Arrives to operator room following orders of Shift Engineer ● Comes under command of leader of IFFS division ● Performs accident containment under orders of leader of IFFS division
Volunteer fire brigade (VFB)	<ul style="list-style-type: none"> ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts; ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination.
«ASF «Safety Service» Ltd	

ACTION CARD № 06

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident «Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– input (output) manifold without gas inflammation.»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> ● Informs dispatcher of Severmoe LPMMPЛ, head of CS and further following the alarm plan. ● Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. ● Controls the emergency shut-down of CD from ACS. In case of necessity shuts the CD manually using AOSS button. ● Controls the valve position changing. Valves: №7, 7a; 8, 20; 1; 2; 6; 36; 36p. 1 – should be closed, №5; 9; 14, 17; 18 should be opened. In case of necessity, valves are operated manually. ● Ensures safe operation of second compressor department by closing interdepartmental connection lines 41-3, 41-4, 42-3, 42-4. ● Arranges all activities related to evacuation of persons, equipment, shut-down of CS until head of GCS arrives. ● When fire is extinguished, provides uninterrupted gas transport depending on situation, by increasing load on the second compressor department. ● Informs LPMMPЛ management and LPMMPЛ dispatcher about all valve position changes implemented. ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● Checks the correctness of GPU shutdown and position change of valves CD. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control.
Operator on duty	<ul style="list-style-type: none"> ● Initiates Severmoe LPMMPЛ system of announcement about emergencies and incidents, system of announcement about emergencies at Severmoe LPMMPЛ facilities in Vsevolozhsk district of Leningrad region. ● Informs management of LPMMPЛ, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPЛs about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives.
Severmoe LPMMPЛ Dispatcher	<ul style="list-style-type: none"> ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrains vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders).
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> ● Arranges CS security on the external perimeter (following management orders).

Driver on duty	<ul style="list-style-type: none"> ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation.
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services.
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel. ● Takes care about evacuation of people from dangerous zone
«ASF «Safety Service» Ltd	<ul style="list-style-type: none"> ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts; ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination.

ACTION CARD № 07

Actions of CS personnel and employees of subdivisions involved
in emergency response to accident «Rupture of HP gas pipeline of interdepartmental connection lines between valves № 41-3 (42-3) u 41-4 (42-4) with gas inflammation»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Informs dispatcher of Severnoe LPMMPPL, leader of IFFS division, head of GCS and further following the alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Controls the emergency shut-down of both CDs from ACS. In case of necessity shuts the CD manually using AOSS button • Controls the valve position changing. Valves: №7, 7a; 8, 20; 1; 2; 6; 36; 36p. 1 – should be closed, №5; 9; 14, 17; 18 should be opened. In case of necessity, valves are operated manually. • Shuts down the interdepartmental connection lines 41-3, 41-4, 42-3, 42-4. • Shuts down power supply to the consumers on fire. Issues permit for fire fighting in the electric installations to the leader of IFFS team. • Arranges all activities related to evacuation of persons, equipment, shut-down of CS and fire-fighting until head of CS arrives. • When accident is eliminated, provides uninterrupted gas transport depending on situation and following orders of LPMMPPL management. • Informs LPMMPPL management and LPMMPPL dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> • Informs Shift Engineer. Follows instructions of Shift Engineer. • Checks the correctness of GPU shutdown and position change of valves CD. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. • Upon completion of valve position changes and GPU shutdowns, starts fire fighting using emergency fire fighting equipment, with strict compliance with safety requirements. When moving around on site, keeps at winward site and at a safety distance from area under fire.
Severnoe LPMMPPL Dispatcher	<ul style="list-style-type: none"> • Initiates Severnoe LPMMPPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPMMPPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPPLs about all changes to valve positions. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Squad leader IFFS (on duty)	<ul style="list-style-type: none"> • Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak.

	<ul style="list-style-type: none"> • Switches on the manual fire annunciator and pressure-holding pumps. • Defines the movement order and location of fire truck with taking into consideration the wind direction. • In case of necessity gets a permit to perform fire-fighting in the electrical installations. • Makes arrangements to reconnaissance the accident site. • Arranges water curtain to cool the equipment located in close proximity to fire hazard • Watches over the safety of people working at fire outbreak site. • Controls fire-fighting process. • Supervises actions of volunteer fire brigade. • Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. • Operates fire water monitor (master stream nozzle). • Reports to Shift Engineer about elimination of fire outbreak.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrains vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed. • Meets the fire brigades arriving to CS. • Arranges CS security on the external perimeter (following management orders).
Driver on duty	<ul style="list-style-type: none"> • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation.
Head of GCS, head of CSD	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency. • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services.
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone
Volunteer fire brigade (VFB)	<ul style="list-style-type: none"> • Arrives to operator room following orders of Shift Engineer • Comes under command of leader of IFFS division

«ASF «Safety Service» Ltd	<ul style="list-style-type: none"> ● Performs accident containment under orders of leader of IFFS division ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts; ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination.
---------------------------	---

ACTION CARD № 08

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident «Rupture of HP gas pipeline of interdepartmental connection lines between valves № 41-3 (42-3) u 41-4 (42-4) without gas inflammation»

Position of employee	<p style="text-align: center;">Actions of employee</p> <ul style="list-style-type: none"> ● Informs dispatcher of Severnoe LPMMPL, head of CS and further following the alarm plan. ● Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. ● Controls the emergency shut-down of both CDs from ACS. In case of necessity shuts the CD manually using AOSS button. ● Controls the valve position changing. Valves: №7, 7a; 8, 20; 1; 2; 6; 36; 36p; 36p. 1 – should be closed, №5; 9; 14, 17; 18 should be opened. In case of necessity, valves are operated manually. ● Shuts down the interdepartmental connection lines 41-3, 41-4, 42-3, 42-4. ● Arranges all activities on evacuation of people, machinery, and shut-down of CS, until GCS leader arrives ● When accident is eliminated, provides uninterrupted gas transport depending on situation and following orders of LPMMPL management. ● Informs LPMMPL management and LPMMPL dispatcher about all valve position changes implemented. ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● Checks the correctness of GPU shutdown and position change of valves CD. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. ● Initiates Severnoe LPMMPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPL facilities in Vsevolzhsk district of Leningrad region.
Operator on duty	
Severnoe LPMMPL Dispatcher	

	<ul style="list-style-type: none"> ● Informs management of LPM MPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPM MPLs about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives. ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders). ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation. ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences. ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services.
Division of NWISD (Security) (shift leader)	
Driver on duty	
Head of GCS, head of CSD	
Head of CP, Head of NWISD Division	
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel. ● Takes care about evacuation of people from dangerous zone ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts; ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination.
«ASF «Safety Service» Ltd	

ACTION CARD № 09

Actions of CS personnel and employees of subdivisions involved

in emergency response to an accident Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2) – process loop of GPU between valves № 1, 2, including gas pipelines of GPU supply system, with gas inflammation»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetskaya»	<ul style="list-style-type: none"> • Informs dispatcher of Severnoe LPMMPL, leader of IFFS division, head of GCS and further following the alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Controls the emergency shut-down of GPU from ACS. In case of necessity shuts the GPU manually using AOSS button. • Controls the closure of valves №1, №2, №4, № 6p, № 12; opening of valve № 5, №9, № 14. In case of necessity valve positions can be changed manually from local control posts. • In case there is a danger that fire can catch the neighbor sites, performs the emergency bleeding of gas from sites endangered by fire. • In case of fire spread inside the hangar of GPU. Controls the actuation of automatic CO2 fire-fighting system. In case of necessity guides the actions of operator on duty to deliver CO2 into the hangar and equipment manually. • Shuts the adjacent active GPUs, is fire spreading gets rampant. • Shuts down the power supply of GPU (input № 1, 2, 3, 4, 5, 6, 7 в КТП Production an operation unit of CD-1 or power unit CD-2). • Issues permit for fire fighting in the electric installations to the leader of IFFS team. • Arranges all activities related to evacuation of persons, equipment, shut-down of CS and fire-fighting until head of CS arrives. • After accident elimination ensures uninterrupted gas transport, depending on situation by starting the reserve GPU or increasing load on the second compressor department. • Informs LPMMPL management and LPMMPL dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> • Informs Shift Engineer. Follows instructions of Shift Engineer. • Checks the correctness of GPU shutdown and position change of valves CD. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. • In case of necessity activates manually the automatic CO2 fire fighting system • Upon completion of valve position changes and GPU shutdowns, starts fire fighting using emergency fire fighting equipment, with strict compliance with safety requirements. When moving around on site, keeps at winward site and at a safety distance from area under fire.
Severnoe LPMMPL Dispatcher	<ul style="list-style-type: none"> • Initiates Severnoe LPMMPL system of announcement about emergencies and incidents, system of announcement

	<p>about emergencies at Severmoe LPM MPL facilities in Vsevolozhsk district of Leningrad region.</p> <ul style="list-style-type: none"> • Informs management of LPM MPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPM MPLs about all changes to valve positions. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
<p>Squad leader IFFS (on duty)</p>	<p>Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak.</p> <ul style="list-style-type: none"> • Switches on the manual fire annunciator and pressure-holding pumps. • Defines the movement order and location of fire truck with taking into consideration the wind direction. • In case of necessity gets a permit to perform fire-fighting in the electrical installations. • Makes arrangements to reconnaissance the accident site. • Arranges the water curtain to cool the equipment located in close proximity to GPU on fire. It is Forbidden to extinguish with water the internal premises of GPU hangar, GPU control unit, GPU fire-fighting unit and GPU air heating unit. • Watches over the safety of people working at fire outbreak site. • Controls fire-fighting process. • Supervises actions of volunteer fire brigade. • Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. • Operates fire water monitor (master stream nozzle). • Reports to Shift Engineer about elimination of fire outbreak.
<p>Division of NWISD (Security) (shift leader)</p>	<ul style="list-style-type: none"> • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed. • Meets the fire brigades arriving to CS. • Arranges CS security on the external perimeter (following management orders).
<p>Driver on duty</p>	<ul style="list-style-type: none"> • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation.
<p>Head of GCS, head of CSD</p>	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency. • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.

<p>Head of CP, Head of NWISD Division</p>	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services. • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone
<p>Emergency elimination (containment) brigade</p>	<ul style="list-style-type: none"> • Arrives to operator room following orders of Shift Engineer • Comes under command of leader of IFFS division • Performs accident containment under orders of leader of IFFS division
<p>Volunteer fire brigade (VFB)</p> <p>«ASF «Safety Service» Ltd</p>	<ul style="list-style-type: none"> • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.

ACTION CARD № 10

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident «Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2) – process loop of GPU between valves № 1.2, including gas pipelines of GPU supply system, without gas inflammation»

<p>Position of employee</p> <p>CS Shift Engineer «Elizavetinskaya»</p>	<p>Actions of employee</p> <ul style="list-style-type: none"> • Informs dispatcher of Severmoe LPMMPL, head of CS and further following the alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Controls the emergency shut-down of GPU from ACS. In case of necessity shuts the GPU manually using AOSS button. • Controls the closure of valves №1, №2, №4, № 6p, № 12; opening of valve № 5, №9, № 14. In case of necessity valve positions can be changed manually from local control posts.
---	---

	<ul style="list-style-type: none"> ● In case of rupture of gas pipeline inside GPU hangar, arranges additional ventilation of the premise by switching on the exhaust and emergency ventilation systems. In case of necessity the ventilation can be turned on manually. ● Arranges all activities related to evacuation of persons, equipment, shut-down of CS until head of GCS arrives. ● After accident elimination ensures uninterrupted gas transport, depending on situation by starting the reserve GPU or increasing load on the second compressor department. ● Informs LPMMPL management and LPMMPL dispatcher about all valve position changes implemented. ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● Checks the correctness of GPU shutdown and position change of valves CD. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. ● In case of necessity turns on the hangar ventilation manually. ● Initiates Severnue LPMMPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnue LPMMPL facilities in Vsevolozhsk district of Leningrad region. ● Informs management of LPMMPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPLs about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives. ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders). ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation. ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences. ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services.
Operator on duty	
Severnue LPMMPL Dispatcher	
Division of NWISD (Security) (shift leader)	
Driver on duty	
Head of GCS, head of CSD	
Head of CP, Head of NWISD Division	

Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone
«ASF «Safety Service» Ltd	<ul style="list-style-type: none"> • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.

ACTION CARD № 11

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident «*Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2)– impulse gas supply pipeline with inflammation*»

CS Shift Engineer «Elizavetinskaya»	<p style="text-align: center;">Position of employee</p> <p style="text-align: center;">Actions of employee</p> <ul style="list-style-type: none"> • Infoms dispatcher of Severmoe LPMMPPL, leader of IFFS division, head of GCS and further following the alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Shuts down CD manually in standard way using NOSS button. • Performs emergency Shutdown of Fuel and Impulse gas treatment unit using AOSS button • Controls the closure of valves №1, №2, № 6p, № 12; opening of valve №9. In case of necessity valve positions can be changed manually from local control posts. • In case there is a danger that fire can catch the neighbor sites, performs the emergency bleeding of gas from sites endangered by fire. • In case of fire spread inside the hangar of GPU (CD-2). Bleeds GPU circuit using AOSS button. Controls the actuation of automatic CO2 fire-fighting system. In case of necessity guides the actions of operator on duty to deliver CO2 into the hangar and equipment manually. Shuts down the power supply of GPU (input № 1, 2, 3, 4, 5, 6, 7 B KTHI Production an operation unit of CD-1 or power unit CD-2). • Shuts down power supply to the consumers on fire. Issues permit for fire fighting in the electric installations to the leader of IFFS team. • Arranges all activities related to evacuation of persons, equipment, shut-down of CS and fire-fighting until head of CS arrives.
-------------------------------------	---

	<ul style="list-style-type: none"> • When accident is eliminated ensures uninterrupted gas transport by increasing load on the second compressor department. • Informs LPMMPPL management and LPMMPPL dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> • Informs Shift Engineer. Follows instructions of Shift Engineer. • Checks the correctness of GPU shutdown and position change of valves CD. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control. • Bleeds impulse gas from the circuit by opening valve #11. • In case of necessity activates manually the automatic CO2 fire fighting system • Upon completion of valve position changes and GPU shutdowns, starts fire fighting using emergency fire fighting equipment, with strict compliance with safety requirements. When moving around on site, keeps at winward site and at a safety distance from area under fire.
Severnore LPMMPPL Dispatcher	<ul style="list-style-type: none"> • Initiates Severnore LPMMPPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnore LPMMPPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPMMPPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPPLs about all changes to valve positions. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Squad leader IFFS (on duty)	<ul style="list-style-type: none"> • Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak. • Switches on the manual fire annunciator and pressure-holding pumps. • Defines the movement order and location of fire truck with taking into consideration the wind direction. • In case of necessity gets a permit to perform fire-fighting in the electrical installations. • Makes arrangements to reconnaissance the accident site. • Arranges water curtain to cool the equipment located in close proximity to fire hazard. • Watches over the safety of people working at fire outbreak site. • Controls fire-fighting process. • Supervises actions of volunteer fire brigade. • Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. • Operates fire water monitor (master stream nozzle). • Reports to Shift Engineer about elimination of fire outbreak.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed.

	<ul style="list-style-type: none"> ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders). ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation. ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences. ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services.
Driver on duty	
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel. ● Takes care about evacuation of people from dangerous zone
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> ● Arrives to operator room following orders of Shift Engineer ● Comes under command of leader of IFFS division ● Performs accident containment under orders of leader of IFFS division
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts; ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination.
Volunteer fire brigade (VFB)	
«ASF «Safety Service» Ltd	

ACTION CARD № 12

Actions of CS personnel and employees of subdivisions involved
in emergency response to accident «Rupture of HP gas pipeline at the territory of compressor department CD-1 (CD-2) – impulse gas supply pipeline without inflammation»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> ● Informs dispatcher of Severnoe LPMMP L, head of CS and further following the alarm plan. ● Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. ● Shuts down the CD manually in a standard way using NOSS button. ● Performs emergency Shutdown of Fuel and Impulse gas treatment unit using AOSS button ● Controls the closure of valves №1, №2, № 6p, № 12; opening of valve №9. In case of necessity valve positions can be changed manually from local control posts. ● Arranges all activities related to evacuation of persons, equipment, shut-down of CS and fire-fighting until head of CS arrives. ● When accident is eliminated ensures uninterrupted gas transport by increasing load on the second compressor department. ● Informs LPMMP L management and LPMMP L dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● Bleeds impulse gas from the circuit by opening valve #i1. ● Checks the correctness of GPU shutdown and position change of valves CD. In case of necessity shuts the active GPUs manually. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control.
Severnoe LPMMP L Dispatcher	<ul style="list-style-type: none"> ● Initiates Severnoe LPMMP L system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMP L facilities in Vsevolozhsk district of Leningrad region. ● Informs management of LPMMP L, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMP Ls about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders).
Driver on duty	<ul style="list-style-type: none"> ● Drives to get the emergency team, if accident takes in place in off-work hours.

	<ul style="list-style-type: none"> ● In work hours participate in personnel evacuation. ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences. ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services. ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel. ● Takes care about evacuation of people from dangerous zone ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts; ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination.
Head of GCS, head of CSD	
Head of CP, Head of NWISD Division	
Emergency elimination (containment) brigade	
«ASF «Safety Service» Ltd	

ACTION CARD № 13

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident «Rupture of LP gas pipeline at the territory of compressor department CD-1 (CD-2) – gas pipeline of own needs with gas inflammation»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> ● Infoms dispatcher of Severmoe LPMMP, leader of IFFS division, head of GCS and further following the alarm plan. ● Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. ● Performs shut-down of all air heating units by AOSS button from Engineer's AWS (automated work station).

	<ul style="list-style-type: none"> • In case there is a danger that fire can catch the neighbor sites, performs the emergency bleeding of gas from sites endangered by fire. • Shuts down power supply to the consumers on fire. Issues permit for fire fighting in the electric installations to the leader of IFFS team. • Arranges all activities related to evacuation of persons, equipment, shut-down of CS and fire-fighting until head of CS arrives. • When accident is eliminated ensures uninterrupted gas transport by increasing load on the second compressor department. • Informs LPM MPL management and LPM MPL dispatcher about all valve position changes implemented. • Informs Shift Engineer. Follows instructions of Shift Engineer. • Check CD valves position change. • Closes valve of gas supply for own needs of CD - t10, after that bleeds gas for own needs from the circuit by opening the vent of air heating unit. • When valve position changes complete, starts actions on containment of fire outbreak by emergency fire fighting equipment, strictly observing safety requirements. When moving around on site, keeps at windward site and at a safety distance from area under fire.
Operator on duty	<ul style="list-style-type: none"> • Initiates Severnoe LPM MPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPM MPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPM MPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPM MPLs about all changes to valve positions. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Severnoe LPM MPL Dispatcher	<ul style="list-style-type: none"> • Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak. • Switches on the manual fire annunciator and pressure-holding pumps. • Defines the movement order and location of fire truck with taking into consideration the wind direction. • In case of necessity gets a permit to perform fire-fighting in the electrical installations. • Makes arrangements to reconnaissance the accident site. • Arranges water curtain to cool the equipment located in close proximity to fire hazard. • Watches over the safety of people working at fire outbreak site. • Controls fire-fighting process. • Supervises actions of volunteer fire brigade. • Follows the orders of IFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. • Operates fire water monitor (master stream nozzle). • Reports to Shift Engineer about elimination of fire outbreak.
Squad leader IFFS (on duty)	

<p>Division of NWISD (Security) (shift leader)</p>	<ul style="list-style-type: none"> • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrains vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed. • Meets the fire brigades arriving to CS. • Arranges CS security on the external perimeter (following management orders). • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation.
<p>Driver on duty</p>	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency.
<p>Head of GCS, head of CSD</p>	<ul style="list-style-type: none"> • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
<p>Head of CP, Head of NWISD Division</p>	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services.
<p>Emergency elimination (containment) brigade</p>	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone
<p>Volunteer fire brigade (VFB)</p>	<ul style="list-style-type: none"> • Arrives to operator room following orders of Shift Engineer • Comes under command of leader of IFFS division • Performs accident containment under orders of leader of IFFS division
<p>«ASF «Safety Service» Ltd</p>	<ul style="list-style-type: none"> • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.

ACTION CARD № 14

Actions of CS personnel and employees of subdivisions involved

in emergency response to accident «Rupture of LP gas pipeline at the territory of compressor department CD-1 (CD-2) – gas pipeline of own needs without gas inflammation»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> ● Informs dispatcher of Severnoe LPMMPЛ, head of CS and further following the alarm plan. ● Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. ● Performs shut-down of all air heating units by AOSS button from Engineer's AWS (automated work station). ● Arranges all activities on evacuation of people, machinery, and shut-down of CS, until GCS leader arrives ● When accident is eliminated ensures uninterrupted gas transport by increasing load on the second compressor department. ● Informs LPMMPЛ management and LPMMPЛ dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● Check CD valves position change. ● Closes valve of gas supply for own needs of CD - t10, after that bleeds gas for own needs from the circuit by opening the vent of air heating unit.
Severnoe LPMMPЛ Dispatcher	<ul style="list-style-type: none"> ● Initiates Severnoe LPMMPЛ system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPЛ facilities in Vsevolozhsk district of Leningrad region. ● Informs management of LPMMPЛ, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPЛs about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders).
Driver on duty	<ul style="list-style-type: none"> ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation.
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency.

	<ul style="list-style-type: none"> • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences. • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services. • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.
Head of CP, Head of NWISD Division	
Emergency elimination (containment) brigade	
«ASF «Safety Service» Ltd	

ACTION CARD № 15

Actions of CS personnel and employees of subdivisions involved
in emergency response to accident «Fire in Production and operation unit (operator room)»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Informs dispatcher of Severmoe LPMMP, head of PWSD, head of CS and further following the alarm plan • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Detects the source of smoke, the fire outbreak location. • In case of fire in control system racks, de-energizes then and performs extinguishing using CO2 fire extinguishers (OY-2, OY-3 and OY-5 available in every room of operation control building). • In case it is impossible to get fire under control, performs the emergency shut-down of CD-1 and CD-2 using AOSS algorithm, without venting of gas from the CS circuit. • In case the side walls or roof of Production and Operation unit building are on fire, switches (commads the operator on duty) the ADES of CD-1 to «OFF» mode, and then completely de-energizes all equipment of production and operation

	<p>unit.</p> <ul style="list-style-type: none"> ● Controls the valve position changing. Valves: №7, 7a; 8; 1; 2; 6p;36; 36p; 1 – should be closed, №5; 9; 14 should be opened. In case of necessity, valves are operated manually. ● Issues permit for fire fighting in the electric installations to the leader of IFFS team. ● Arranges all works on evacuation of people and equipment, shutdown of CS and fire fighting, until head of CS arrives. ● Informs management and LPMMPPL dispatcher about all valve positions' changes. ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● Removes to a safe distance from CS territory all people and equipment that are not involved in the accident elimination. People and equipment should be located on the windward side from the point of gas or fire outbreak, and at a distance of at least 300m. ● Switches ADES of CD-1 to «OFF» mode following orders of Shift Engineer ● Checks the correctness of GPU, CD shutdown, and valves position change. In case of incorrect position change of valves of compressor piping, adjust them in accordance with process diagram, using local control posts for valves manual control, at that keeps windward from area of gas or fire outbreak. ● Upon completion of valve position changes and GPU shutdowns, starts fire fighting using emergency fire fighting equipment, with strict compliance with safety requirements. When moving around on site, keeps at windward site and at a safety distance from area under fire.
Operator on duty	<ul style="list-style-type: none"> ● Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak, fuel and lubrication materials and other hazards. ● Switches on the manual fire annunciator and pressure-holding pumps. ● Defines the movement order and location of fire truck with taking into consideration the wind direction. ● Gets permit to perform fire fighting in the electrical installations. ● Makes arrangements to reconnaissance the accident site. ● Arranges the water curtain to cool the equipment located in close proximity to building \ equipment on fire. It is FORBIDDEN to fight a fire using water in the internal premises of Production and Operation unit\building. ● Watches over the safety of people working at fire outbreak site. ● Controls fire-fighting process. ● Supervises actions of volunteer fire brigade. ● Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. ● Operates fire water monitor (master stream nozzle). ● Reports to Shift Engineer about elimination of fire outbreak.
Squad leader IFFS (on duty)	
Severnoe LPMMPPL Dispatcher	<ul style="list-style-type: none"> ● Initiates Severnoe LPMMPPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPPL facilities in Vsevolozhsk district of Leningrad region. ● Informs management of LPMMPPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher

	<p>service of neighbouring LPMMPs about all changes to valve positions.</p> <ul style="list-style-type: none"> • Supervises the process of containment and elimination of emergency until Branch Management arrives. • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed. • Meets the fire brigades arriving to CS. • Arranges CS security on the external perimeter (following management orders). • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency. • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Driver on duty	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services.
Head of GCS, head of CSD	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Arrives to operator room following orders of Shift Engineer • Comes under command of leader of IFFS division • Performs accident containment under orders of leader of IFFS division
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts;
Volunteer fire brigade (VFB)	
«ASF «Safety Service» Ltd	

	<ul style="list-style-type: none"> ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination
--	---

ACTION CARD № 16

Actions of CS personnel and employees of subdivisions involved in emergency response to accident «*Fire in oil storage room*»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> ● Informs dispatcher of Severnoe LPMMP, leader of IFFS division, head of GCS and further following the alarm plan. ● Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions ● De-energizes power supply of oil warehouse. Issues to commander of IFFS division the permit to fight fire in electrical installation. ● In case of danger of fire spreading, stops GPU-14, and starts another GPU to support main gas pipeline operation. ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● In case of necessity and following orders of Shift Engineer, checks the correctness of shutdown of GPU №14. In case of incorrect position change of valves of compressor, adjusts them to match the process diagram, using local control posts for manual valve control.
Operator on duty	<ul style="list-style-type: none"> ● Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak, fuel and lubrication materials and other hazards. ● Switches on the manual fire annunciator and pressure-holding pumps. ● Defines the movement order and location of fire truck with taking into consideration the wind direction. ● Gets permit to perform fire fighting in the electrical installations. ● Makes arrangements to reconnaissance the accident site. ● Arranges the water curtain to cool the equipment located in close proximity to building \ equipment on fire (ADES и GPU № 14). It is FORBIDDEN to fight fire using water in the internal premises of oil warehouse. ● Watches over the safety of people working at fire outbreak site. ● Controls fire-fighting process. ● Supervises actions of volunteer fire brigade. ● Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. ● Operates fire water monitor (master stream nozzle). ● Uses foam to extinguish oil on fire. ● Reports to Shift Engineer about elimination of fire outbreak.
Squad leader IFFS (on duty)	
Severnoe LPMMP, Dispatcher	<ul style="list-style-type: none"> ● Initiates Severnoe LPMMP, system of announcement about emergencies and incidents, system of announcement

	<p>about emergencies at Severmoe LPM MPL facilities in Vsevolozhsk district of Leningrad region.</p> <ul style="list-style-type: none"> ● Informs management of LPM MPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPM MPLs about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives. ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrains vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders). ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Driver on duty	<ul style="list-style-type: none"> ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services.
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel. ● Takes care about evacuation of people from dangerous zone
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> ● Arrives to operator room following orders of Shift Engineer ● Comes under command of leader of IFFS division ● Performs accident containment under orders of leader of IFFS division
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts;
Volunteer fire brigade (VFB)	
«ASF «Safety Service» Ltd	

	<ul style="list-style-type: none"> • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.
<p>ACTION CARD № 17</p> <p>Actions of CS personnel and employees of subdivisions involved in emergency response to accident <i>«Fire in block-type boiler-house»</i></p>	
Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Informs dispatcher of Severnoe LPM MPL, leader of IFFS division, head of GCS and further following the alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Shuts down electric power to boiler-house. Issues to commander of IFFS division the permit to fight fire in electrical installation. • Controls the condition of CS heat supply system. Prevents its freezing. • Informs Shift Engineer. Follows instructions of Shift Engineer.
Operator on duty	<ul style="list-style-type: none"> • Shuts down the boiler-hour, turns off the fuel gas supply, bleeds the remaining gas through the vent stacks. • After fuel gas bleeding and complete shut down of electric power starts procedures for containment of fire outbreak point using primary fire fighting equipment, in strict compliance with safety requirements. When moving around on site, keeps at inward site and at a safety distance from area under fire.
Squad leader IFFS (on duty)	<ul style="list-style-type: none"> • Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak, fuel and lubrication materials and other hazards. • Switches on the manual fire annunciator and pressure-holding pumps. • Defines the movement order and location of fire truck with taking into consideration the wind direction. • Gets permit to perform fire fighting in the electrical installations. • Makes arrangements to reconnaissance the accident site. • Arranges the water curtain to cool the equipment located in close proximity to building \ equipment on fire. In is FORBIDDEN to extinguish fire using water in the internal premises of Boiler-house. • Watches over the safety of people working at fire outbreak site. • Controls fire-fighting process. • Supervises actions of volunteer fire brigade. • Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. • Operates fire water monitor (master stream nozzle). • Reports to Shift Engineer about elimination of fire outbreak.
Severnoe LPM MPL Dispatcher	<ul style="list-style-type: none"> • Initiates Severnoe LPM MPL system of announcement about emergencies and incidents, system of announcement

	<p>about emergencies at Sevmoe LPMPL facilities in Vsevolozhsk district of Leningrad region.</p> <ul style="list-style-type: none"> ● Informs management of LPMPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMPLs about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives. ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrains vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders). ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Driver on duty	<ul style="list-style-type: none"> ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders ● Arranges interaction with law-enforcement agencies and EMERCOM services.
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Upon arrival starts containment and elimination of accident following orders from operations leader ● Puts out the guard-posts to secure the dangerous area, using available personnel. ● Takes care about evacuation of people from dangerous zone
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> ● Arrives to operator room following orders of Shift Engineer ● Comes under command of leader of IFFS division ● Performs accident containment under orders of leader of IFFS division
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> ● Reports upon arrival to the responsible ER manager; ● Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts;
Volunteer fire brigade (VFB)	
«ASF «Safety Service» Ltd	

	<ul style="list-style-type: none"> • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.
--	--

ACTION CARD № 18

Actions of CS personnel and employees of subdivisions involved in emergency response to accident «*Fire in Power substation 35/10 kV*»

Position of employee	Actions of employee
CS Shift Engineer « <i>Elizavetinskaya</i> »	<ul style="list-style-type: none"> • Informs the dispatcher of Severmoe LPMMP, commander of IFFS division, head of EWS dpt., head of GCS and further following alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • Switches CD-1 and CD-2 to be power supplied from ADES. • Controls operation of main electric power consumers of GPU - VOD, fans of oil air cooling unit, of gas air cooling unit. • Reinstates the operation ability of Fuel and Impulse gas treatment unit, pump stations of fire and potable water supply and artesian wells, of boiler-house (if needed). • Records the consumption of diesel fuel and oil for ADES. Timely informs management about need to provide fuel and lubrication materials. • In case it is not possible to start ADES – shut down CD using AOSS button , without gas venting. At that GPU should be stopped using AOSS button(with gas venting). • Ensures that power is cut off from supply lines 35kV. Issues permit for fire fighting in the electric installations to the leader of IFFS team. • Ensures uninterrupted gas transportation. • Arranges all works on evacuation of people and equipment, shutdown of CS and fire fighting, until head of CS arrives. • Informs LPMMP management and LPMMP dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> • Informs Shift Engineer. Follows instructions of Shift Engineer. • Controls the start up of emergency diesel power stations of CD-1 and CD-2, in case of necessity and following orders of Shift Engineer performs start-up manually. • Controls operation of main electric power consumers of GPU - VOD, fans of oil air cooling unit, of gas air cooling unit. • Every two hours measures the fuel and oil levels in the tanks of ADES.
Squad leader IFFS (on duty)	<ul style="list-style-type: none"> • Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak, fuel and lubrication materials and other hazards. • Switches on the manual fire annunciator and pressure-holding pumps.

	<ul style="list-style-type: none"> ● Defines the movement order and location of fire truck with taking into consideration the wind direction. ● Gets permit to perform fire fighting in the electrical installations. ● Makes arrangements to reconnaissance the accident site. ● Arranges the water curtain to cool the equipment located in close proximity to building \ equipment on fire. It is FORBIDDEN to extinguish using water and foam in the internal premises of transformer substation. ● Watches over the safety of people working at fire outbreak site. ● Controls fire-fighting process. ● Supervises actions of volunteer fire brigade. ● Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. ● Operates fire water monitor (master stream nozzle). ● Reports to Shift Engineer about elimination of fire outbreak.
Severnøe LPMMPL Dispatcher	<ul style="list-style-type: none"> ● Initiates Severnøe LPMMPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnøe LPMMPL facilities in Vsevolozhsk district of Leningrad region. ● Informs management of PLMMPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPLs about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives.
Division of NWISD (Security) (shift leader)	<ul style="list-style-type: none"> ● Arranges evacuation of personnel from CS site via the main and back-up exits. ● Arranges evacuation of personnel from area of possible impact. ● Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. ● Undertakes urgent measures to help the injured, calls for ambulance if needed. ● Meets the fire brigades arriving to CS. ● Arranges CS security on the external perimeter (following management orders).
Driver on duty	<ul style="list-style-type: none"> ● Drives to get the emergency team, if accident takes in place in off-work hours. ● In work hours participate in personnel evacuation.
Head of GCS, head of CSD	<ul style="list-style-type: none"> ● Undertakes measures to inform and gather the emergency team. ● Places the warning signs to fence the emergency site, sets up the guard posts, if needed ● Arranges works on containment and elimination of emergency. ● Undertakes measures to locate the personnel and machinery in accordance with Regulations on Safe operation of Main gas pipelines. ● Clarifies the size of emergency. ● Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> ● Arranges security of emergency area. ● Arranges evacuation of people and machinery following CS management orders

	<ul style="list-style-type: none"> • Arranges interaction with law-enforcement agencies and EMERCOM services. • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone • Arrives to operator room following orders of Shift Engineer • Comes under command of leader of IFFS division • Performs accident containment under orders of leader of IFFS division • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.
Emergency elimination (containment) brigade	
Volunteer fire brigade (VFB)	
«ASF «Safety Service» Ltd	

ACTION CARD № 19

Actions of CS personnel and employees of subdivisions involved in emergency response to accident «*Fire in power unit of CD-2*»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Informs the dispatcher of Severmoe LPMMP, commander of IFFS division, head of EWS dept., head of GCS and further following alarm plan. • Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. • In case it is impossible to get fire under control, performs the emergency shut-down of CD-2 using AOSS algorithm, without venting of gas from the CS circuit. • When operation unit wall panels or roof are on fire, switches (gives order to operator on duty) ADES CD-2 to «OFF» mode, and then completely de-energizes all equipment of operation unit CD-2. • Controls the valve position changing. Valves: №7, 7a; 8;20, 1; 2; 6p;36; 36p. 1 – should be closed, №5; 9; 14 should be opened. In case of necessity, valves are operated manually. • Issues permit for fire fighting in the electric installations to the leader of IFFS team. • Arranges all works on evacuation of people and equipment, shutdown of CS and fire fighting, until head of CS arrives.

	<ul style="list-style-type: none"> • Ensures uninterrupted gas transport by putting in operation the parallel CD. • Informs LPMMPPL management and LPMMPPL dispatcher about all valve position changes implemented. • Informs Shift Engineer. Follows instructions of Shift Engineer. • Following orders of Shift Engineer switches ADES CD-2 to «OFF» mode. • Checks the correctness of GPU, CD shutdown, and valves position change. In case of incorrect position change of valves of compressor piping, adjust them in accordance with process diagram, using local control posts for valves manual control, at that keeps windward from area of gas or fire outbreak. • Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak, fuel and lubrication materials and other hazards. • Switches on the manual fire annunciator and pressure-holding pumps. • Defines the movement order and location of fire truck with taking into consideration the wind direction. • Gets permit to perform fire fighting in the electrical installations. • Makes arrangements to reconnaissance the accident site. • Arranges the water curtain to cool the equipment located in close proximity to building \ equipment on fire (ADES). It is FORBIDDEN to extinguish using water and foam in the internal premises of operation unit. • Watches over the safety of people working at fire outbreak site. • Controls fire-fighting process. • Supervises actions of volunteer fire brigade. • Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. • Operates fire water monitor (master stream nozzle). • Reports to Shift Engineer about elimination of fire outbreak.
Operator on duty	
Squad leader IFFS (on duty)	<ul style="list-style-type: none"> • Initiates Severnoe LPMMPPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of LPMMPPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPPLs about all changes to valve positions. • Supervises the process of containment and elimination of emergency until Branch Management arrives. • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrain vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed. • Meets the fire brigades arriving to CS. • Arranges CS security on the external perimeter (following management orders).
Severnoe LPMMPPL Dispatcher	
Division of NWISD (Security) (shift leader)	

Driver on duty	<ul style="list-style-type: none"> • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation.
Head of GCS, head of CSD	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency. • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences. • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Arrives to operator room following orders of Shift Engineer • Comes under command of leader of IFFS division • Performs accident containment under orders of leader of IFFS division
Volunteer fire brigade (VFB)	<ul style="list-style-type: none"> • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; • Provides first aid to the possible injured persons; • Estimates the condition of air, borders and direction of gassed zone spreading; • Puts out the posts; • Performs the continuous control of air condition; • Performs the gas dangerous works and gas rescue operations. • Implements actions for accident containment and elimination.
«ASF «Safety Service» Ltd	

ACTION CARD № 20

Actions of CS personnel and employees of subdivisions involved in emergency response to accident «Fire at ADES (diesel-power station)»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> ● Informs the dispatcher of Severnoe LPMMPPL, commander of IFFS division, head of EWS dept., head of GCS and further following alarm plan. ● Announces using «public address system» about evacuation from CS territory for all persons and equipment that are not involved in emergency response actions. ● Gives order to operator on duty to switch ADES to «OFF» mode. ● Gives order to operator on duty to cut off electric power supply to ADES and POL warehouse. ● Ensures that power is cut off from ADES. Issues permit for fire fighting in the electric installations to the leader of IFFS team. ● Arranges all works on evacuation of people and equipment, shutdown of CS and fire fighting, until head of CS arrives. ● Informs LPMMPPL management and LPMMPPL dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● Following orders of Shift Engineer switches ADES to «OFF» mode. ● Completely de-energizes ADES and POL warehouse. ● If possible closes the valves of fuel supply from reservoirs to ADES, after that opens valves of emergency discharge of diesel fuel into underground reservoir. ● Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak, fuel and lubrication materials and other hazards. ● Switches on the manual fire annunciator and pressure-holding pumps. ● Defines the movement order and location of fire truck with taking into consideration the wind direction. ● Gets permit to perform fire fighting in the electrical installations. ● Arranges the reconnaissance of accident site ● Arranges the water curtain to cool the equipment located in close proximity to building \ equipment on fire. In is FORBIDDEN to extinguish fire using water in the internal premises of ADES. ● Watches over the safety of people working at fire outbreak site. ● Controls fire-fighting process. ● Supervises actions of volunteer fire brigade. ● Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. ● Operates fire water monitor (master stream nozzle).
Squad leader IFFS (on duty)	<ul style="list-style-type: none"> ● Arrives to CD operation room as soon as the information about fire outbreak is received. Clarifies with Shift Engineer about pipelines filled with gas located near the place of fire outbreak, fuel and lubrication materials and other hazards. ● Switches on the manual fire annunciator and pressure-holding pumps. ● Defines the movement order and location of fire truck with taking into consideration the wind direction. ● Gets permit to perform fire fighting in the electrical installations. ● Arranges the reconnaissance of accident site ● Arranges the water curtain to cool the equipment located in close proximity to building \ equipment on fire. In is FORBIDDEN to extinguish fire using water in the internal premises of ADES. ● Watches over the safety of people working at fire outbreak site. ● Controls fire-fighting process. ● Supervises actions of volunteer fire brigade. ● Follows the orders of FFFS leader, as soon as the first subdivision of the federal fire-fighting service (FFFS) arrives. ● Operates fire water monitor (master stream nozzle).

	<ul style="list-style-type: none"> • Applies foam to extinguish diesel fuel on fire. • Reports to Shift Engineer about elimination of fire outbreak.
Severnoe LPMMPPL Dispatcher	<ul style="list-style-type: none"> • Initiates Severnoe LPMMPPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPMMPPL facilities in Vsevolozhsk district of Leningrad region. • Informs management of PLMMPL, Dispatcher service of «Gasprom transgaz Saint-Petersburg» LLC, Dispatcher service of neighbouring LPMMPPLs about all changes to valve positions. • Supervises the process of containment and elimination of emergency until Branch Management arrives. • Arranges evacuation of personnel from CS site via the main and back-up exits. • Arranges evacuation of personnel from area of possible impact. • Restrains vehicles from driving to CS site to the area of emergency, except emergency brigade vehicles. • Undertakes urgent measures to help the injured, calls for ambulance if needed. • Meets the fire brigades arriving to CS. • Arranges CS security on the external perimeter (following management orders). • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation.
Division of NWISD (Security) (shift leader)	
Driver on duty	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency. • Undertakes measures to place equipment and personnel in accordance with safety requirements in emergency. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Head of GCS, head of CSD	
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services.
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone
Volunteer fire brigade (VFB)	<ul style="list-style-type: none"> • Arrives to operator room following orders of Shift Engineer • Comes under command of leader of IFFS division • Performs accident containment under orders of leader of IFFS division
«ASF «Safety Service» Ltd	<ul style="list-style-type: none"> • Reports upon arrival to the responsible ER manager; • Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations;

	<ul style="list-style-type: none"> ● Provides first aid to the possible injured persons; ● Estimates the condition of air, borders and direction of gassed zone spreading; ● Puts out the posts; ● Performs the continuous control of air condition; ● Performs the gas dangerous works and gas rescue operations. ● Implements actions for accident containment and elimination.
--	---

ACTION CARD № 21

Actions of CS personnel and employees of subdivisions involved in emergency response to accident «*Emergency power shutdown*»

Position of employee	Actions of employee
CS Shift Engineer « <i>Elizavetinskaya</i> »	<ul style="list-style-type: none"> ● Informs the dispatcher of Severnoe LPM MPL, head of EWS dept., head of GCS and further following alarm plan ● Controls triggering of Automatic transfer circuit breaker and/or switching on emergency diesel power station. ● Controls operation of main electric power consumers of GPU - VOD, fans of oil air cooling unit, of gas air cooling unit. ● Reinstates the operation ability of Fuel and Impulse gas treatment unit, pump stations of fire and potable water supply and artesian wells, of boiler-house. ● Records the consumption of diesel fuel and oil for ADES. Timely informs management about need to provide fuel and lubrication materials. ● In case of complete electric power failure on both 35kV inputs, and there is no possibility to start ADES – shuts down CD using AOSS button, without gas venting. ● Ensures uninterrupted gas transportation by opening valves № 20-3, 20-4, after pressure is equalized/balanced before and after the valve.
Operator on duty	<ul style="list-style-type: none"> ● Informs Shift Engineer. Follows instructions of Shift Engineer. ● Controls the start up of emergency diesel power stations of CD-1 and CD-2. ● Controls operation of main electric power consumers of GPU - VOD, fans of oil air cooling unit, of gas air cooling unit. ● Every two hours measures the fuel and oil levels in the tanks of ADES.
Severnoe LPM MPL Dispatcher	<ul style="list-style-type: none"> ● Initiates Severnoe LPM MPL system of announcement about emergencies and incidents, system of announcement about emergencies at Severnoe LPM MPL facilities in Vsevolozhsk district of Leningrad region. ● Informs management of PLM MPL, Dispatcher service of «<i>Gasprom transgaz Saint-Petersburg</i>» LLC, Dispatcher service of neighbouring LPM MPLs about all changes to valve positions. ● Supervises the process of containment and elimination of emergency until Branch Management arrives.

Driver on duty	<ul style="list-style-type: none"> • Drives to get the emergency team, if accident takes in place in off-work hours. • In work hours participate in personnel evacuation. • Undertakes measures to inform and gather the emergency team. • Negotiates with power supply company, if needed. • Protects the accident area, puts out the guard-posts, if needed. • Arranges safe execution of works on containment and elimination of accident. • Clarifies the size of emergency. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences. • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone

ACTION CARD № 22

Actions of CS personnel and employees of subdivisions involved
in emergency response to accident *«Rupture of heat supply pipeline (in winter season)»*

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Informs the dispatcher of Severnoe LPMMPL, head of EWS dpt., and further following alarm plan • Announces about accident using «public address system» • Arranges works on containment and draining of damaged section of heat supply line, if the accident takes place in off-work hours. • Informs LPMMPL management and LPMMPL dispatcher about all valve position changes implemented. • Informs Shift Engineer. Follows instructions of Shift Engineer.
Operator on duty	<ul style="list-style-type: none"> • Checks heat-chambers and reports to Shift Engineer, if accident takes place in off-work hours. • Following orders of Shift Engineer performs cut-off and drainage of damaged section using valves of respective heat-chamber. • Every two hours controls the pressure of direct and return heat transfer medium in the boiler-house. • Following instructions of Shift Engineer performs switching in the heat chambers to cut-off and drain the damaged section.

Severnoe LPMMPPL Dispatcher	<ul style="list-style-type: none"> • Informs LPMMPPL management. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Driver on duty	<ul style="list-style-type: none"> • Drives to get the emergency team, if accident takes in place in off-work hours.
Head of EWS department	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency, drainage of damaged section. • Arranges heating of premises disconnected from heat supply due to accident, by means of electric convection heaters. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges evacuation of people and machinery following CS management orders • Arranges interaction with law-enforcement agencies and EMERCOM services. (if needed)
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel. • Takes care about evacuation of people from dangerous zone

ACTION CARD № 23

Actions of personnel of Severnoe LPMMPPL and employees of subdivisions involved in emergency response to accident *«Close-down of communication means of fiber-optic line equipment»*

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Following instructions of dispatcher of Severnoe LPMMPPL performs additional control of CS equipment in operation.
Communication Engineer	<ul style="list-style-type: none"> • Locates the points of communication channel drop-out using optic fiber monitoring system (OTU-8000) and reflectometer (MTS-6000). • When fiber optic is welded, measures the communication line and communication channel signal tracing, following order of Communication service Dpt. Head.
Severnoe LPMMPPL Dispatcher	<ul style="list-style-type: none"> • Informs LPMMPPL management. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Driver on duty	<ul style="list-style-type: none"> • Delivers specialists of communication service to the location of fiber optic cable damage.
Head of Communication service dpt.	<ul style="list-style-type: none"> • Informs dispatcher of Severnoe LPMMPPL, Shift Engineer about accident; • Assigns a task to the specialists of Fiber Optic line to recover the operation ability of equipment (Fiber-Optic cable) and driver on duty to deliver specialists to the location of damage. • Informs dipatcher of Severnoe LPMMPPL and Shift Engineer of CS Elizavetinskaya about recovery of fiber-optic communication line

Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges interaction with law-enforcement agencies and EMERCOM services. (if needed) • Departs to cable damage location. • Inspects on foot the Fiber optic line using VIVAX device, in order to detect the exact point of cable damage. When cable damage point is detected, start damage repair works: make off the fiber optic cable end, then splice fibers using welding device. • Reports to the Head of communication service when welding is complete
Emergency elimination (containment) brigade	

ACTION CARD № 24

Actions of personnel of **Severnoe LPMMPL** and employees of subdivisions involved in emergency response to accident «Close-down of communication means of digital radio-relay equipment»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Following instructions of dispatcher of Severnoe LPMMPL performs additional control of CS equipment in operation.
Communication Engineer	<ul style="list-style-type: none"> • Arranges inspection of back-up fiber optic line and switching of signal to the back-up line. • Defines the location of signal drop-out using tester 2 Mb signals (MAKC-EM) • Connects to the terminal equipment of respective subsystem and performs ste-by-step measurements of digital radio-relay line channels in the HF distribution unit (cross).
Severnoe LPMMPL Dispatcher	<ul style="list-style-type: none"> • Informs LPMMPL management. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Driver on duty	<ul style="list-style-type: none"> • Delivers specialists of communication service to the location of Digital radio-relay line equipment.
Head of Communication service dpt.	<ul style="list-style-type: none"> • Informs dispatcher of Severnoe LPMMPL, Shift Engineer about accident; • Assigns a task to the specialists of PPJI to recover the operation ability of equipment of Digital radio-relay line and driver to deliver specialists to the damage location. • Informs dipatcher of Severnoe LPMMPL and Shift Engineer of CS Elizavetinskaya about recovery of Digital radio-relay line equipment
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Arranges security of emergency area. • Arranges interaction with law-enforcement agencies and EMERCOM services. (if needed)
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Departs to the location of Radio-relay line equipment damage • Starts searching for failed 2 Mb channel using terminal equipment»Spectral View». • Checking cross-connections and repairs the communication channel • Reports to the Head of communication service when equipment is repaired

ACTION CARD № 25

Actions of CS personnel and employees of subdivisions involved
in emergency response to accident «Rupture of pipeline of artesian well container piping»

Position of employee	Actions of employee
CS Shift Engineer «Elizavetinskaya»	<ul style="list-style-type: none"> • Informs dispatcher of Severnoe LPMMPL, head of EWS service and further according to alarm plan. • Announces about accident using «public address system» asking to reduce the consumption of water. • Arranges containment and drainage of damaged section, if accident takes place in off-work hours. • As soon as information received about accident containment, recovers the water supply to CS by starting the back-up artesian well • Informs LPMMPL management and LPMMPL dispatcher about all valve position changes implemented.
Operator on duty	<ul style="list-style-type: none"> • Informs Shift Engineer. Follows instructions of Shift Engineer. • If accident takes place in off-work hours, inspects the block-box enclosure of artesian wells and reports to Shift Engineer • Following instructions of Shift Engineer switches piping of block-box enclosure to cut-off and drain the damaged section. • Informs Shift Engineer about accident containment. • Checks the cut-off section for leaks after start-up of back-up artesian well.
Severnoe LPMMPL Dispatcher	<ul style="list-style-type: none"> • Informs LPMMPL management. • Supervises the process of containment and elimination of emergency until Branch Management arrives.
Driver on duty	<ul style="list-style-type: none"> • Drives to get the emergency team, if accident takes in place in off-work hours. • Delivers CS personnel to the artesian well site.
Head of EWS department	<ul style="list-style-type: none"> • Undertakes measures to inform and gather the emergency team. • Places the warning signs to fence the emergency site, sets up the guard posts, if needed • Arranges works on containment and elimination of emergency, drainage of damaged section. • Upon completion of emergency elimination reports to LPM management the preliminary assessment of incurred material damage, and required material resources to eliminate the accident consequences.
Head of CP, Head of NWISD Division	<ul style="list-style-type: none"> • Arranges security of emergency area. (if needed)
Emergency elimination (containment) brigade	<ul style="list-style-type: none"> • Upon arrival starts containment and elimination of accident following orders from operations leader • Puts out the guard-posts to secure the dangerous area, using available personnel.

Main contacts:

- 1 Severnolozhskiy Branch of LLC "Gazpromtransgaz Saint-Petersburg"
 - Director tel. 54-201.
 - Chief Engineer - first deputy director 54-202.
 - Deputy Chief Engineer for OH&IS 54-307.
- 2 LLC "Gazpromtransgaz Saint-Petersburg"
 - Head of PDS shift tel. 33-306; 33-206; 33-365.
 - Dispatcher of Severnolozhskiy LPDMP tel. 54-206; 54-306; (8-813-70) 52-193, 594-90-27; 8 (921) 767-55-14.
- 3 Chief Directorate of EMERCON in Leningrad Region
 - duty officer tel. 640-21-60.
- 4 NWRC North-West Regional Center (in case of emergency or accident)
 - duty officer tel. 540-59-83.
- 5 Vsevolozhskiy Region
 - duty office of "Vsevolozhskiy region" administration tel. (8-813-70) 25-488; 8-921-767-54-83.
 - head of CD&ES Dept. – Civil defense and emergency situations in Vsevolozhsk town, tel. (8-813-70) 20-064.
 - emergency gas service in Vsevolozhsk town, tel. (8-813-70) 40-388.
- 6 Vyborg Region
 - duty office of "Vyborg region" administration tel. (8-813-78) 22-175.
 - head of CD&ES Dept. – Civil defense and emergency situations in Vyborg town, tel. (8-813-78) 20-577.
 - emergency gas service in Vyborg town, tel. (8-813-78) 24-190.

7 АСФ "ASF "Safety Service" Ltd- duty officer tel. 8 (812) 98-48-911.

3.5 Emergency response plan in Volkhovskoe Branch

Accident elimination plan in Volkhovskoe Branch is provided in Table 21.7.

Table 21.7.

Emergency Response Plan in Volkhovskoe Branch

ACTION CARD № 14

Actions of personnel of Volkhovskoe LPMMP Branch

at accident elimination of "Rupture of main gas pipeline «North-European gas pipeline - I» between valve sites at 477 and 596 km, with methane emission to atmospheric air».

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<ol style="list-style-type: none"> 1. Using communication means, informs dispatcher of Pikalevskoe LPMMP about necessity to close valves № 477. 12. 9 (if needed), 477-3 and organizes post at km 477. 2. Using TM (telemetry) devices, shuts off the damaged section by closing valve № 498-3. 3. Upon approval of PWS service department head disconnects the section of HV line -10 kV (using TM system) 4. Informs head of PDS shifts of Severnoe, Kolpinskoe LPMMP dispatchers. 5. Commands over the phone and "Rupor" system to perform the emergency gathering on the roll. 6. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 7. Informs Branch management by any means available. Gets approval to infringe the duty dispatcher of ASF "Security Service". 8. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS. 9. Reports to Crisis Management Center at EMERCOM. 10. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 11. Upon approval of Society PDS performs actions to maintaining gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.

Employee number (general for all cards)	Position	Actions
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of № 1 proceeds to find the emergency location to clarify its character. 2. When accident is detected informs № 1 about location and character of accident.
№7	Accident containment team №2	Following command of № 1 goes to km 498 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations.

Employee number (general for all cards)	Position	Actions
		8. Implements actions for accident containment and elimination.

ACTION CARD № 15

Actions of personnel of Volkhovskoe LPPMPL Branch

In case of emergency "Rupture of main gas pipeline «NEGP-I» between valve sites at 498 and 511 km, with methane emission to atmospheric air ".

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<ol style="list-style-type: none"> 1. Using TM (telemetry) devices, shuts off the damaged section by closing valve № 511. 34. 0 (if needed), 498-3; 19-3. 2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system 3. Using communication means, informs head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPPMPL. 4. Commands over the phone and "Rupor" system to perform the emergency gathering on the roll. 5. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service". 7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS. 8. Reports to Crisis Management Center at EMERCOM. 9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 10. Upon approval of Society PDS performs actions to maintaining gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.

Employee number (general for all cards)	Position	Actions
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of №1 proceeds to find the emergency location to clarify its character. 2. When accident is detected informs №1 about location and character of accident.
№7	Accident containment team №2	Following command of №1 goes to km498 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of №1 goes to km511 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№10	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

ACTION CARD № 16

Personnel actions - *Volkhovskoe LPMMPL*

at accident elimination of "*Rupture of main gas pipeline "NEGP-I" between valve sites at 511 and 512 km, with methane emission to atmospheric air*".

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<p>1. Using TM means, shuts off the damaged section, by closing valves № 511. 34. 9(if needed), KP 512, 512. 31. 9, 19-3. Commands the shift engineer to :</p> <ul style="list-style-type: none"> - shut off the damaged section by closing valves № 20-3. - emergency shutdown of workshop №3 and closing valves 7-31,7-32. <p>2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system)</p> <p>3. Using communication means, informs head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPMMPL.</p> <p>4. Commands over the phone and «Rupor» system to perform the emergency gathering on the roll.</p> <p>5. Sends №7 to find the accident site and organize the posts (change block valve position if needed).</p> <p>6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service".</p> <p>7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS.</p> <p>8. Reports to Crisis Management Center at EMERCOM.</p> <p>9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure.</p> <p>10. Upon approval of Society PDS performs actions to maintaing gas transportation mode - start/stop of GPU, opening/closing process cross-connections.</p>
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.

Employee number (general for all cards)	Position	Actions
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of №1 proceeds to find the emergency location to clarify its character. 2. When accident is detected informs №1 about location and character of accident.
№7	Accident containment team №2	Following command of №1 goes to km512 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of №1 goes to km511 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

ACTION CARD № 17

Personnel actions - Volkhovskoe LPMMPL

at accident elimination of "Rupture of main gas pipeline "NEGP-1" between valve sites at 512 and 514 km, with methane emission to atmospheric air "".

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<ol style="list-style-type: none"> 1. Using TM means, shuts off the damaged section, by closing valves № 514. 34. 0(if needed), 21-3. Commands the shift engineer to : <ul style="list-style-type: none"> - shut off the damaged section by closing valves № 20-3. - emergency shutdown of workshop №3 and closing valves 8-3. 2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system) 3. Using communication means, informs head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPMMPL. 4. Commands over the phone and "Rupor" system to perform the emergency gathering on the roll. 5. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service". 7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS. 8. Reports to Crisis Management Center at EMERCOM. 9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 10. Upon approval of Society PDS performs actions to maintaining gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.

Employee number (general for all cards)	Position	Actions
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of № 1 proceeds to find the emergency location to clarify its character. 2. When accident is detected informs № 1 about location and character of accident.
№7	Accident containment team №2	Following command of № 1 goes to km512 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of № 1 goes to km514 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

ACTION CARD № 18

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment at accident elimination of "Rupture of main gas pipeline "NEGP-1" between valve sites at 513 and 543 km. with methane emission to atmospheric air".

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<ol style="list-style-type: none"> 1. Using TM (telemetry) devices, shuts off the damaged section by closing valve № 543. 34. 0 (if needed), 21-3; 543-3; и 514. 34. 9; 2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system) 3. Using communication means, informs head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPMMP. 4. Commands over the phone and "Rupor" system to perform the emergency gathering on the roll. 5. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service". 7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS. 8. Reports to Crisis Management Center at EMERCOM. 9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 10. Upon approval of Society PDS performs actions to maintaining gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.

Employee number (general for all cards)	Position	Actions
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of №1 proceeds to find the emergency location to clarify its character. 2. When accident is detected informs №1 about location and character of accident.
№7	Accident containment team №2	Following command of №1 goes to km513 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of №1 goes to km543 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

ACTION CARD № 19

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment at accident elimination of "Rupture of main gas pipeline "NEGP-I" between valve sites at 543 and 568 km, with methane emission to atmospheric air".

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<ol style="list-style-type: none"> 1. Using TM (telemetry) devices, shuts off the damaged section by closing valve № 568. 34. 0 (if needed), 543-3; 568-3; и 543. 34. 9; 2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system) 3. Using communication means, informs head of PDS shift, dispatchers of Severmoe, Kolpinskoe and Pikalevskoe LPMMPL. 4. Commands over the phone and «Rupor» system to perform the emergency gathering on the roll. 5. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service". 7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS. 8. Reports to Crisis Management Center at EMERCOM. 9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 10. Upon approval of Society PDS performs actions to maintaining gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations.

Employee number (general for all cards)	Position	Actions
		<p>3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed).</p> <p>4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager.</p> <p>5. Follows the directions of ER manager.</p>
№7	Accident containment team №1	<p>1. Following command of №1 proceeds to find the emergency location to clarify its character.</p> <p>2. When accident is detected informs №1 about location and character of accident.</p>
№7	Accident containment team №2	<p>Following command of №1 goes to km543 to arrange the post and change the position of block valve (if needed).</p>
№7	Accident containment team №3	<p>Following command of №1 goes to km568 to arrange the post and change the position of block valve (if needed).</p>
№8	Head of Security Service Dpt.	<p>1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed).</p> <p>2. Arrives on emergency site to inspect the area.</p> <p>3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site.</p> <p>4. Carries out the evacuation of injured (if needed).</p>
№9	Emergency team of ASF "Safety Service"	<p>1. Reports upon arrival to the responsible ER manager;</p> <p>2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations;</p> <p>3. Provides first aid to the possible injured persons;</p> <p>4. Estimates the condition of air, borders and direction of gassed zone spreading;</p> <p>5. Puts out the posts;</p> <p>6. Performs the continuous control of air condition;</p> <p>7. Performs the gas dangerous works and gas rescue operations.</p> <p>8. Implements actions for accident containment and elimination.</p>

ACTION CARD № 20

Actions of Linear O&M service Dpt. personnel and workers of subdivisions for accident containment

at accident elimination of "NEGP-I" between valve sites at 568 and 596 km. with methane emission to atmospheric air"

Employee number (general for all cards)	Position	Actions
№1	Диспетчер ДС	<ol style="list-style-type: none"> 1. Using TM (telemetry) devices, shuts off the damaged section by closing valve № 596. 34. 0 (if needed), 568-3; 596-3; и 568. 34. 9; 2. По согласованию с начальником службы ЭВС отключает участок ВЛЗ-10 кВ при помощи системы ТМ и связывается с электросетевой организацией (диспетчер электрических сетей отключает участок ВЛЗ-10 кВ при помощи системы ТМ). 3. Using communication means, informs head of PDS shift, dispatchers of Severное, Kolpinskoe and Pikalevskoe LРММРЛ. 4. Commands over the phone and "Rupor" system to perform the emergency gathering on the toll. 5. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service". 7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS. 8. Reports to Crisis Management Center at EMERCOM. 9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 10. Upon approval of Society PDS performs actions to maintain gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager.

Employee number (general for all cards)	Position	Actions
№7	Accident containment team №1	<p>5. Follows the directions of ER manager.</p> <p>1. Following command of № 1 proceeds to find the emergency location to clarify its character.</p> <p>2. When accident is detected informs № 1 about location and character of accident.</p>
№7	Accident containment team №2	Following command of № 1 goes to km568 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of № 1 goes to km596 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<p>1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed).</p> <p>2. Arrives on emergency site to inspect the area.</p> <p>3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site.</p> <p>4. Carries out the evacuation of injured (if needed).</p>
№9	Emergency team of ASF "Safety Service"	<p>1. Reports upon arrival to the responsible ER manager;</p> <p>2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations;</p> <p>3. Provides first aid to the possible injured persons;</p> <p>4. Estimates the condition of air, borders and direction of gassed zone spreading;</p> <p>5. Puts out the posts;</p> <p>6. Performs the continuous control of air condition;</p> <p>7. Performs the gas dangerous works and gas rescue operations.</p> <p>8. Implements actions for accident containment and elimination.</p>

Emergency response plan in case of accident at main gas pipeline "North-European gas pipeline – 2", section of operational responsibility of Volkhovskoe LPMMP.

The natural gas is used in the main process at these facilities. The natural gas is explosion and fire hazardous substance.

ACTION CARD № 40

Personnel actions - Volkhovskoe LPMML

at accident elimination of "Rupture of main gas pipeline "NEGP-2" between valve sites at 511 and 512 km, with methane emission to atmospheric air " .

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<p>1. Using TM means, shuts off the damaged section, by closing valves № 511. 34. 9(if needed), 21-4. Commands the shift engineer to :</p> <ul style="list-style-type: none"> - shut off the damaged section by closing valves № 20-4. - emergency shutdown of workshop №4 and closing valves 7-41, 7-42. <p>2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system</p> <p>3. Using communication means, informs head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPMML.</p> <p>4. Commands over the phone and «Rupor» system to perform the emergency gathering on the roll.</p> <p>5. Sends №7 to find the accident site and organize the posts (change block valve position if needed).</p> <p>6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service".</p> <p>7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS.</p> <p>8. Reports to Crisis Management Center at EMERCOM.</p> <p>9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure.</p> <p>10. Upon approval of Society PDS performs actions to maintaining gas transportation mode - start/stop of GPU, opening/closing process cross-connections.</p> <p>Informs the shift. Operates under the management of №1.</p>
№2	GCS shift engineer	
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.
№6	Head of Linear O&M Service	<p>1. Performs alarm reporting, assembly of emergency response team.</p> <p>2. Defines the structure of teams, posts and their positioning at valve stations.</p> <p>3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed).</p> <p>4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager.</p>

Employee number (general for all cards)	Position	Actions
		5. Follows the directions of ER manager.
№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of № 1 proceeds to find the emergency location to clarify its character. 2. When accident is detected informs № 1 about location and character of accident.
№7	Accident containment team №2	Following command of № 1 goes to km512 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of № 1 goes to km511 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

ACTION CARD № 41

Personnel actions - *Volkhovskoe LPMMPL*

at accident elimination of "*Rupture of main gas pipeline "NEGP-2" between valve sites at 512 and 514 km. with methane emission to atmospheric air "*".

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<p>1. Using TM means, shuts off the damaged section, by closing valves № 514. 34. 0(if needed), 21-4. Commands the shift engineer to :</p> <ul style="list-style-type: none"> - shut off the damaged section by closing valves № 20-4. - emergency shutdown of workshop №4 and closing valves 8-4. <p>2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system)</p> <p>3. Using communication means, informs head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPMMPL.</p> <p>4. Commands over the phone and "Rupor" system to perform the emergency gathering on the roll.</p> <p>5. Sends №7 to find the accident site and organize the posts (change block valve position if needed).</p> <p>6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service".</p> <p>7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS.</p> <p>8. Reports to Crisis Management Center at EMERCOM.</p> <p>9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure.</p> <p>10. Upon approval of Society PDS performs actions to maintaining gas transportation mode - start/stop of GPU, opening/closing process cross-connections.</p> <p>Informs the shift. Operates under the management of №1.</p>
№2	GCS shift engineer	
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.

Employee number (general for all cards)	Position	Actions
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of № 1 proceeds to find the emergency location to clarify its character. 2. When accident is detected informs № 1 about location and character of accident.
№7	Accident containment team №2	Following command of № 1 goes to km512 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of № 1 goes to km514 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

ACTION CARD № 42

Personnel actions - *Volkhovskoe LPMMPL*

at accident elimination of "Rupture of main gas pipeline **"NEGP-2"** between valve sites at **514** and **543** km, with methane emission to atmospheric air".

Employee number (general for all cards)	Position	Actions
№1	Диспетчер ДС	<ol style="list-style-type: none"> 1. Using TM (telemetry) devices, shuts off the damaged section by closing valve № 543. 34. 0 (if needed), 21-4; 543-4; и 514. 34. 9; 2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system) 3. Using communication means, informs head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPDMP. 4. Commands over the phone and «Rupor» system to perform the emergency gathering on the roll. 5. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service". 7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS. 8. Reports to Crisis Management Center at EMERCOM. 9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 10. Upon approval of Society PDS performs actions to maintaining gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
№7	Accident	1. Following command of № 1 proceeds to find the emergency location to clarify its character.

Employee number (general for all cards)	Position	Actions
	containment team №1	2. When accident is detected informs № 1 about location and character of accident.
№7	Accident containment team №2	Following command of № 1 goes to km514 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of № 1 goes to km543 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

ACTION CARD № 43

Personnel actions - ***Volkhovskoe LPMMPL***

at accident elimination of "Rupture of main gas pipeline "NEGP-2"" *between valve sites at 543 and 568 km, with methane emission to atmospheric air* ".

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	1. Using TM (telemetry) devices, shuts off the damaged section by closing valve № 568. 34. 0 (if needed), 543-4; 568-4; и 543.

Employee number (general for all cards)	Position	Actions
		<p>34. 9;</p> <ol style="list-style-type: none"> 2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system) 3. Using communication means, infirms head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPMMP.L. 4. Commands over the phone and «Rupor» system to perform the emergency gathering on the roll. 5. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 6. Informs Branch management by any means available. Gets approval to infirm the duty dispatcher of ASF "Security Service". 7. Informs the duty dispatcher of ASF "Security Service". Reports preliminary data to the Society PDS. 8. Reports to Crisis Management Center at EMERCOM. 9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 10. Upon approval of Society PDS performs actions to maintaing gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of №1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from №1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of №1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Perfoms alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.
№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of №1 proceeds to find the emergency location to clarify its character. 2. When accident is detected infirms №1 about location and character of accident.
№7	Accident containment team №2	Following command of №1 goes to km543 to arrange the post and change the position of block valve (if needed).
№7	Accident	Following command of №1 goes to km568 to arrange the post and change the position of block valve (if needed).

Employee number (general for all cards)	Position	Actions
	containment team №3	
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

ACTION CARD № 44

Personnel actions - Volkhovskoe LPMMPL

at accident elimination of "Rupture of main gas pipeline "NEGP-2" between valve sites at 568 and 596 km, with methane emission to atmospheric air "".

Employee number (general for all cards)	Position	Actions
№1	DS Dispatcher	<ol style="list-style-type: none"> 1. Using TM (telemetry) devices, shuts off the damaged section by closing valve № 596. 34. 0 (if needed), 568-4; 596-4; и 568. 34. 9; 2. Upon approval of PWS service department head disconnects the section of HV line -10 kV using TM system) 3. Using communication means, informs head of PDS shift, dispatchers of Severnoe, Kolpinskoe and Pikalevskoe LPMMPL. 4. Commands over the phone and «Rupor» system to perform the emergency gathering on the roll. 5. Sends №7 to find the accident site and organize the posts (change block valve position if needed). 6. Informs Branch management by any means available. Gets approval to inform the duty dispatcher of ASF "Security Service" . 7. Informs the duty dispatcher of ASF "Security Service" . Reports preliminary data to the Society PDS. 8. Reports to Crisis Management Center at EMERCOM. 9. Until ER operations manager arrives to CS, manages the actions of personnel on duty and emergency assembly procedure. 10. Upon approval of Society PDS performs actions to maintaing gas transportation mode - start/stop of GPU, opening/closing process cross-connections.
№2	GCS shift engineer	Informs the shift. Operates under the management of №1.
№3	Duty Bus Driver	Following command of № 1 proceeds to get the emergency teams.
№4	Branch Management	As soon as information is received from № 1, arrives to CS and manages the process of accident containment and elimination.
№5	Head of DFFS	Following command of № 1 arrives to emergency area. Controls the gas emission conditions (intensity, inflammation). As soon as the gas completely discharges, reports to DS. Performs deployment and starts fire fighting in case hot spots arise. Supervises the fire fighting operations until top management arrives.
№6	Head of Linear O&M Service	<ol style="list-style-type: none"> 1. Performs alarm reporting, assembly of emergency response team. 2. Defines the structure of teams, posts and their positioning at valve stations. 3. Provides preparations and arrival of ER teams to estimated accident site, to close the valves at the emergency section (if needed). 4. Arranges work of subordinate personnel, sets tasks to each worker, defines the procedure of accident elimination works and gets it approved by the ER manager. 5. Follows the directions of ER manager.

№7	Accident containment team №1	<ol style="list-style-type: none"> 1. Following command of №1 proceeds to find the emergency location to clarify its character. 2. When accident is detected informs №1 about location and character of accident.
№7	Accident containment team №2	Following command of №1 goes to km568 to arrange the post and change the position of block valve (if needed).
№7	Accident containment team №3	Following command of №1 goes to km596 to arrange the post and change the position of block valve (if needed).
№8	Head of Security Service Dpt.	<ol style="list-style-type: none"> 1. Informs security personnel, security dpt. of NWISD, law enforcement authorities (if needed). 2. Arrives on emergency site to inspect the area. 3. Together with NWISD security dpt, law enforcement authorities (if needed) undertakes measures to prevent access of unauthorised persons to emergency site. 4. Carries out the evacuation of injured (if needed).
№9	Emergency team of ASF "Safety Service"	<ol style="list-style-type: none"> 1. Reports upon arrival to the responsible ER manager; 2. Performs investigation in the gassed environment in order to find and evacuate the injured, clarify the situation in the area of emergency response and rescue operations; 3. Provides first aid to the possible injured persons; 4. Estimates the condition of air, borders and direction of gassed zone spreading; 5. Puts out the posts; 6. Performs the continuous control of air condition; 7. Performs the gas dangerous works and gas rescue operations. 8. Implements actions for accident containment and elimination.

Main contacts:

1 Volkhovskoe LPMPL – Branch of LLC "Gazprom transgaz Saint-Petersburg"

– Director tel. 51-201, 51-101, 8-921-948-32-65, 78-484;

– Chief Engineer - first deputy director tel. 51-202, 51-102, 8-921-924-84-33;

– Deputy Chief Engineer for HS&IS 51-214.

2 LLC "Gazprom transgaz Saint-Petersburg"

– Head of PDS shift tel. 33-306, 33-206, 33-365;

- Dispatcher of Severnoe LPMMPL tel. 54-206;
- Dispatcher of Pikalevskoe LPDMP tel. 52-256.
- Dispatcher of Kolpinskoe LPMMPL tel. 53-206.
- 3 EMERCON of Volkhov district
 - chief duty dispatcher tel. 73-272, 71-661.
- 4 Fire department of Volkhov district
 - chief dispatcher tel. 72-224.
- 5 Law enforcement department of Volkhov district
 - police call center tel. 72-105, 71-356.
- 6 ASF "Safety Service" Ltd- duty officer tel. 8 (812) 98-48-911.

3.6 Allocation of responsibilities between managers and workers participating in accidents elimination, and their operations procedure

3. 6. 1 General provisions

The manager responsible for localization and elimination of impact of the accidents in Portovoe, Severnoe and Volkhovskoe branch, when several facilities are exposed or there is threat to other facilities, is the Technical Director (if absent, Deputy Production Director), and in case of accidents within one workshop or service, the manager of this facility (or deputy facility manager).

It is strictly forbidden to interfere with the actions of the manager responsible for accident containment and elimination operations.

In case of actions of the manager responsible for accident containment and elimination operations that are apparently wrong, his(her) immediate senior supervisor can remove him (her) and assume supervision of the accident elimination or assign another person for the purpose.

Until the arrival of the manager responsible for accident consequences elimination at the accident site, the corresponding shift dispatcher is directing the operations.

Individuals called for elimination of the accident consequences and to rescue people, notify the responsible manager of their arrival and start their operations at his (her) instruction.

During the operations for elimination of accident consequences, only the individuals participating directly in the accident elimination can be present at the facility. People not participating in the accident consequences elimination must leave the facility immediately.

Obligations of the manager responsible for accident elimination (ER Manager):

– On arrival at the accident site and after becoming familiar with the situation, to immediately start operations provided for in the Accident Elimination Plan, and supervise the people rescue operations and elimination of the accident consequences.

– To make sure that the executives are called for and that services are notified according to the list approved.

– To instruct the removal or evacuation of people from dangerous sites and the establishment of the security posts equipped with communication devices at the approaches to the emergency zone.

– To give corresponding instructions to the management of the facilities and services interconnected by utility connections.

– To monitor the implementation of measures provided for in the accident elimination plan and of his instructions.

- To notify the senior organization of the situation and, if necessary, to call for the adjacent departments for assistance.
- After localization of the accident, to take measures for implementation of recovery operations.
- To assign the person responsible for recording in the operations log of the accident consequences elimination.

Obligations of the department manager (deputy manager):

- Upon receiving the notice of the accident, to immediately arrive at the department and notify the dispatcher.
- To organize for medical aid to the injured in due time.
- According to the inquiry of the manager responsible, to take necessary measures for engagement of experienced workers and professionals in the teams for manning and implementation of necessary operations related to consequences elimination and the accident localization, as well as to timely supply the materials and equipment necessary.
 - To ensure the provision of materials, tools etc. to the accident site.
 - To direct the operations of the vehicles engaged in the accident consequences elimination.
 - In case of emergency operations of a duration longer than 8 hours, to organize for meals and rest for the personnel participating in the operations.

Obligations of the shift engineer:

- The shift engineer notifies the dispatcher of the accident personally.
- Simultaneously, the shift engineer must take measures for people rescue and accident localization, following the accident elimination plan according to the situation.

Obligations of the dispatcher:

- To call for the Federal Rescue Service at the accident site immediately, personally or through subordinates, and for a departmental fire safety service unit (in case of combustion), and to notify the Company DM dispatcher.
 - To immediately (before the arrival of the responsible manager) organize and start implementing the people rescue and accident consequences elimination operations according to the measures of the accident consequences elimination plan.
 - According to the situation, to provide for maintenance or shutdown of the normal industrial operation process.

- In case of accidents that lead to an alteration of the adjacent facilities and departments regime, to notify the shift personnel of those facilities and departments of the alterations.
- To send the task vehicle for the professionals.
- In case of accident, to perform the duties of the manager responsible for measures of accident consequences elimination according to the “Accident Elimination Plan”.
- To take all the initial measures for people rescue and the accident consequences localization and elimination.
- On arrival of the facility technical director (deputy), to notify him (her) of the course of people rescue and accident elimination operations, to notify the management of all the services engaged in the accident elimination of the new control post location, and place him(her)self under orders of the manager responsible for the accident elimination operations.

Obligations of the managing, professional and working personnel of the main special facilities where the accident took place:

- To take measures for evacuation from the hazardous area and provision of first aid to the injured, and to eliminate the accident according to the Accident Elimination Plan.
- In case of learning about the accident while being at the department site, to arrive to the service manager immediately for tasks assignment.

Obligations of the service manager:

- To provide for arrival of and organization of operations of the electricians, mechanics and other professionals, and to establish their continuous availability in order to execute the accident elimination operations.
- By the instruction of the manager responsible, to provide for the electric energy supply and other power supply utilities switching on/off, for normal operation of the electromechanical and power supply equipment and of the instrumentation and controls equipment, telematics, good operating condition of gas, heat and other mainlines and networks.

3.6.2 Responsibilities and authority of company's officials

The Manager of emergency response operations at the Branch facilities (hereinafter – Executive officer) is Chief Engineer – First Deputy Director of the Branch.

No interference to the actions of Executive officer is allowed.

During day time the management of accident containment and elimination, evacuation of personnel unengaged in the operations, is performed directly by Executive officer.

During night time and until executive officer arrives, the operations on accident

containment and elimination, evacuation of personnel unengaged in the operations, is performed by Branch dispatcher officer.

The direct management of fire fighting works until head of DFFS arrives, is performed by commander of DFF service subdivision of the Branch, considering tasks assigned by the dispatcher of the Branch.

Persons summoned for accident elimination and rescue people, report to the executive officer upon arrival, and proceed to performing their duties.

Chief Engineer – Branch First Deputy Director:

- on receipt of emergency message, arrives to the Control Room and organizes a Control Point (or, if required, the activities of the Emergency Prevention and Response and Fire Safety committee), informs all the persons involved on its location and continuously stays therein;

- having familiarized himself with the situation and on receipt of information from the Dispatcher, immediately initiates the actions scheduled by the Emergency Response Plan (ERP);

- gives instruction to dispatch teams to shut the emergency area down, adjust the valving and define the exact location of the emergency;

- verifies if the executives are called according to the Communication Chart and relevant organizations are notified;

- verifies if the DFFS squad has been sent to the emergency site;

- defines the total amount of people caught by the emergency, their location, organizes their evacuation and rescue;

- gives appropriate instructions to the Heads of services to implement the actions specified by ERP operations charts and other instructions that ensure safety;

- gives instructions to remove people from hazardous and potentially hazardous areas and to put out posts at the routes of approach to the emergency site;

- monitors the execution of the actions specified by ERP operations charts, of his own instructions and orders;

- informs the Branch Director on the activities' progress, at his direction reports to the Company Management, submits the request (if needed) for ATS (automatic load transfer switch) section participation in the activities;

- after the accident has been contained, gives permission to eliminate the damage caused by the accident, to carry out recovery work and to start the equipment to ensure the

required mode of gas transfer and its supply to consumers.

Branch Director:

- on receipt of emergency message, arrives to the Control Room;
- upon the request of the Executive Officer, takes the decision on the necessity of the additional Branch personnel to be involved in the activities on the accident containment and response;
- ensures the operation of emergency and materials stores, as well as timely equipment and materials supply to the emergency area;
- supervises the activities of the Motor Transport Service;
- should the emergency response last over 6 hours, organizes catering and rest for the working personnel.

Dispatcher:

- ensures the localization of the emergency area by the fault section disconnection from the operating gas pipelines applying telecontrol systems (or dispatches emergency response teams and gives instruction to localize the area and instructs process compressors operators, pipeline walkers/riders to rearrange the piping valves);
- takes the required actions to support the standard conditions of the equipment operation, takes measures to ensure the gas transport and supply to the consumers within the maximum possible predetermined scopes;
- notifies gas distributing and gas consuming organizations on gas supply interruption or reduction of supply and on the necessity to change over to emergency fuel.
- announces the “Emergency Alert” in the Branch, notifies the Company PDS (Production Dispatcher Service, Dispatcher Services of neighboring Company Branches, Emergency Rescue Group (ERG) "Safety Service" and other parties concerned on the emergency (or accident).
- ensures the assembly and dispatch of emergency response teams;
- prior to Chief Engineer – Branch First Deputy Director arrival, acts for the Executive Officer, takes measures to rescue and/or evacuate people and localize the emergency in accordance with the ERP operations charts, gives instructions to the operating subordinate personnel and Heads of Services arriving to CS;
- after the Executive Officer arrival, informs the latter on the status of personnel rescue or evacuation and accident localization, makes all the emergency response participants aware of the Control Point location;

- passes to the Executive Officer operational control;
- report to the Company PDS on the progress of the accident containment and response and recovery efforts;

- keeps the event history records.

ASF "Safety Service" Ltd:

- report to the Executive Officer on their arrival;
- carry out prospecting in the gassed area with the view to find and evacuate injured or aggrieved persons, to clarify the situation in the area of salvage and rescue operations;
- administer first aid, if required, to the possible injured persons;
- define the air condition, the limits and direction of gassed zone propagation;
- put out posts;
- Monitor the air condition;
- execute gas hazardous and gas rescue activities.
- take accident containment and response actions.

Shift Engineer:

- on receipt of emergency message, arrives to the Main Control Room (MCR) of CD (Compressor Department), reports thereof to the Executive Officer and Dispatcher and continuously stays therein;

- acts in compliance with ERP operations charts, carries out required switches, if needed or by Dispatcher's direction shuts down the GPU or CD (CDs), takes measures for the accident containment, follows the personnel compliance with the job safety requirements;

- direct the shift operators' activities, gives instructions related to the main and auxiliary equipment operating mode, people removal from the emergency zone, first aid treatment (as required);

- as required, carries out routine switchings of electric installations including the ones related to their shutdown, load transfer or connection of emergency sources;

- reports to the Branch Dispatcher on the measures taken and hereafter follows the instructions of the Executive Officer and Dispatcher;

- on arrival of GCS Head or his deputy, reports on the field conditions and measures taken;

- in the event of fire, sets up the meeting of a DFFS team and its forwarding to the accident site. Should fire-fighting at operating electric installations be required, shall shut them down, execute the permit to fire fighting at disconnected power equipment and hand it over to

DFFS team.

DS Head:

- on receipt of emergency message, arrives to the Control Room, receives information from the Dispatcher on the measures taken, evaluates the situation, controls the Dispatcher's actions and operating instructions;
- ensures operational control and cooperation of the Branch services involved in the accident containment and response;
- take measures to support the specified mode of MGPL facilities operation, gas transport and gas supply to the consumers;
- upon the Executive Officer arrival, reports to him on the status of the people rescue operations and on the measures taken to localize the emergency, hereafter follows his instructions and orders.

GCS Head:

- on receipt of emergency message, arrives to the Control Room and reports thereof to the Executive Officer and Branch Dispatcher;
- makes himself familiar with the current situation, gets instructions from the Executive Officer or Branch Dispatcher;
- arrives to the Main Control Room (MCR) of CD (Compressor Department), checks the situation and information on the completed actions with the Shift Engineer;
- organizes (controls) the subordinate personnel activities on CD equipment restoration focusing on personnel safety;
- as required, works out the measures to prevent the increase of the accident/emergency scope and consequences;
- organizes interaction with other services to disconnect (if required) power supply sources, sources of hazardous substances, to ensure operational modes of ventilation systems, including emergency one;
- provides for the emergency response team preparation and departure to the accident site;
- delivers labour protection briefing to the emergency response participants with registration and signature of attendees in the log, provides them with required materials and protection equipment;
- puts out security posts, organizes the protection of the accident site with warning signs;
- follows the instructions of the Executive Officer.

LGPOM(linear gas pipeline section O&M service) Head:

- on receipt of emergency message, arrives to the Control Room and reports thereof to the Executive Officer and Branch Dispatcher;
- makes himself familiar with the current situation, gets instructions from the Executive Officer or Branch Dispatcher;
- defines the minimum required teams' staff, number of posts and their location, necessity and location of warning signs installation;
- provides for the emergency response teams preparation and departure to the supposed accident site, conducts target safety training to the emergency response participants with registration and signature of trainees in the log, provides them with required personal and collective protection equipment;
- defines and coordinates with Executive Officer the number of required automotive and special equipment for emergency response, the priority of its supply to the working area;
- directs the shipping of heavy-duty equipment, materials, pipes, accessories, coordinates the traffic route of the motor convoy and single motor vehicle to the accident site;
- departs to the accident site for emergency response purposes;
- follows the instructions of the Executive Officer.

GDS O&M Head:

- on receipt of emergency message, arrives to the Control Room and reports thereof to the Executive Officer and Branch Dispatcher;
- makes himself familiar with the current situation, gets instructions from the Executive Officer or Branch Dispatcher and gets their approval for the emergency response procedure;
- defines the minimum required teams' staff, number of posts and their location, necessity and location of warning signs installation;
- provides for the emergency response team preparation, assembly and departure to the accident site;
- delivers labour protection briefing to the emergency response participants with registration and signature of attendees in the log, provides them with required personal and collective protection equipment;
- departs to the accident site for emergency response purposes;
- follows the instructions of the Executive Officer.

MTE Head:

- on receipt of emergency message, arrives to the Control Room and reports thereof to the Executive Officer and Branch Dispatcher;
- makes himself familiar with the current situation, ascertains information and gets instructions from the Executive Officer or Branch Dispatcher;
- checks the performance of the task crew bus driver and the bus traffic route while gathering the emergency response team staff;
- notifies MTE personnel;
- provides for equipment spotting, checking the personnel compliance with safety requirements;
- gets the Executive Officer approval for the convoy traffic route to the emergency response site, ensures convoy escort;
- follows the instructions of the Executive Officer.

SPWS, CPS (Corrosion Protection Service), T&W (Telecommunication & Warning),

IAS Heads:

- on receipt of emergency message, arrives to the Control Room and reports thereof to the Executive Officer and Branch Dispatcher;
- make themselves familiar with the current situation, get instructions from the Executive Officer or Branch Dispatcher and get their approval for further actions;
- depart to their working places and check the process status to prevent further possible constraints and to create required conditions for successful emergency response;
- provide the organization of the subordinate personnel activities, set their continuous duty until the emergency operations and equipment restoration are completed, check the personnel compliance with safety requirements;
- by the Executive Officer direction, provide for the electric power supply (disconnection), electromechanical equipment restoration, ensure good condition of communication means and lines, signaling/alarm systems, process communications of the service facilities;
- subject to situation, ensure the continuity of the gas transfer process or change over to trip mode;
- in the event of evacuation alert (removal of personnel to a safe zone), organize the personnel evacuation to the muster point and their registration;

- follow the instructions of the Executive Officer;
- notify the Heads of the Company technical departments and services of the emergency and measures taken.

SSD Head:

- on receipt of emergency message, arrives to the Control Room and reports thereof to the Executive Officer and Branch Dispatcher;
- makes himself familiar with the current situation, gets instructions from the Executive Officer or Branch Dispatcher and gets approval for his further actions;
- in the event of an emergency the nature of which leaves open the possibility of sabotage, departs to the emergency area and examines the accident site and adjacent territory;
- by efforts of Custodial Department together with SSD and internal affairs authorities (if needed), takes measures to prevent unauthorized access to the accident;
- detects the nature of the accident (man-made, criminal) and, accordingly, takes relevant actions, effects coordination with law-enforcement agencies;
- ensure personnel evacuation to a safety zone.
- follows the instructions of the Executive Officer;
- organizes the access of involved organization and special equipment.

DFFS Head:

- on receipt of emergency message, arrives to the Control Room and reports thereof to the Executive Officer and Branch Dispatcher;
- makes himself familiar with the current situation, checks it, gets instructions from the Executive Officer or Branch Dispatcher and gets their approval for his further actions;
- directs the fire fighting activities in accordance with the Executive Officer instructions;
- as required, organized timely call of DFFS off-duty/relief shift to the accident or fire site;
- stays in communication with the Executive officer and regularly informs the latter on the fire suppression progress;
- if needed, organizes the fire fighting cooperation of MChS (RF Ministry for Emergency Situations) and ASF «Safety Service» Ltd fire teams.

Branch OH&IS Deputy Chief Engineer:

- on arrival to the CS, carries out control of compliance with safety requirements during emergency response operations and of proper and timely PPE application.

- keeps North-West Directorate of Rostekhnadzor (Federal Service for Environmental, Technological and Nuclear Supervision) informed on the emergency, executes documents for current injuries.

- Together with medical staff, organizes medical treatment of the injured and aggrieved persons.

CD & ES Engineer:

- on receipt of emergency message, arrives to the Control Room and reports thereof to the Executive Officer and Branch Dispatcher;

- makes himself familiar with the current situation, gets instructions from the Executive Officer or Branch Dispatcher and gets their approval for his further actions;

- together with the Executive Officer anticipates, detects and analyses possible dangers at the Branch facilities and adjacent territories with respect to the evidence of ES;

- in the event that ES evidence is detected, together with SSD Head ensures personnel evacuation to a safety zone;

- organizes emergency rescue and other urgent activities if the Branch employees are endangered;

- organizes prospecting and monitoring of radioactive, chemical, biological and other types of contamination (pollution);

- cooperates with administration and capabilities of functional and territorial subsystems of Universal State System of ES Prevention and Response;

- follows the instructions of the Executive Officer.

GCS Engineering Technician:

- promptly arrives to CS by request of GCS Head or shift Dispatcher and actively participates in emergency response activities;

- takes part in maintaining good condition of the station equipment and in preventing risk to life, following the instructions of the persons directly running the emergency response or fire suppression.

Process Compressor Operator:

- follows all instructions of GCS Shift Engineer, in the absence of the latter – those of the Shift Dispatcher;

- actively participates in emergency response activities, meets the emergency response team, fire teams.

Electrical Technician:

- as required, disconnects equipment power supply at the accident site, starts fire pumps, provides continuous power supply for compressor station;
- as required, together with internal combustion engine operator and process compressor operator provides switching and operation of CS emergency power supplies.

CD Electrician:

- checks good condition and operation of communicators, promptly conversations not directly relevant to the emergency;
- stays in communication with the Branch Dispatcher and follows his operating instructions;

Medical Staff:

- promptly depart on call, administer first aid to injured or aggrieved persons, direct dispatching of injured persons to a hospital;
- organize continuous medical duty for the whole duration of emergency and rescue activities.

Emergency response activities are carried out by efforts of:

- Branch teams;
- Company Emergency Recovery Operations Department (MERO);
- Emergency Rescue Group, with which the Company have concluded a Contract and coordinated the Emergency Response Plans – "ASF "Safety Service" Ltd

3.7 Emergency drills and fire safety trainings schedule

3.7.1 Conducting emergency and fire drills in Portovoe branch

The Portovoye branch develops annually an emergency drills and fire safety trainings schedule, to be approved by the Technical Director – the First Deputy Director of the Portovoye branch, designating the supervisor and participants of the trainings. Table 21.8 shows the subjects of the emergency drills and fire safety trainings at the Portovoye branch for 2014.

Table 21.8.

Subjects of the emergency drills and fire safety trainings at the Portovoye branch for 2014.

Subject	Training participants
Emergency drills	
Rupture of the fuel gas line from the gas preparation plant -1 to the gas pumping units with and without combustion.	Gas compressor service
Rupture of the interdepartment process lines of the Compressor Department – 2 at the section between the safety node and valves 8, 8-1, 20-2 with and without combustion.	
Rupture of the gas pipeline for own needs at the section from gas	

Subject	Training participants
preparation plant -2 to the ventilation and heating units of the gas pumping units	
Rupture of the gas pipeline at the diagnostic pig site from the valve No. MOV 1205 to the valve No. SDV 1203	
Fire safety trainings	
Fire at Compressor Department 1 power unit	Gas compressor service
Combustion in the gas pumping units shed	
Fire in the compressor chamber of the steel water boiler KSV 1	
Combustion of the switchgear of the Liquid Firefighting Gas Unit 1. 1	
Fire safety trainings	
"Fire-fighting operations at the branch facilities" – Stabilized condensate storage	Gas transportation preparation complex, gas compressor service, power and water supply service
"Fire-fighting operations at the branch facilities" – Gas preparation plant	
"Fire-fighting operations at the branch facilities" – Power unit building of the Compressor Department -1	
"Fire-fighting operations at the branch facilities" – Indoor switchgear building – 10 kV and communal meter 110/10 kV no. 135	
"Fire-fighting operations at the branch facilities" – Drummed oil storage	
"Fire-fighting operations at the branch facilities" – Unit modular boiler building	
"Fire-fighting operations at the branch facilities" - Power unit building of the Compressor Department – 2	
"Fire-fighting operations at the branch facilities" – Check desk building and communication center	
"Fire-fighting operations at the branch facilities" - Gas pumping units device 25 MW	
"Fire-fighting operations at the branch facilities" – Petroleum, oil and lubricants store	
"Fire-fighting operations at the branch facilities" – Machinery repair shop building and standby engines store	
"Fire-fighting operations at the branch facilities" - Gas pumping units device 50 MW	
"Fire-fighting operations at the branch facilities" - Gas transportation preparation plant territory and power plant building with a control room	
"Fire-fighting operations at the branch facilities" – administration and amenity building	
"Fire-fighting operations at the branch facilities" – Gas measuring station	
"Fire-fighting operations at the branch facilities" – Stationary incineration complex	
"Fire-fighting operations at the branch facilities" – Vehicles gas-filling compressor station	
"Fire-fighting operations at the branch facilities" – Fire house	
Emergency drills	
"Damage of the power-supplied equipment, external power supply loss" 1 st quarter	Communication service
"Damage of the main gas pipeline, mobile node deployment, establishment of communication during emergency operations" 1 st quarter	
"Damage of main cable communication line at the gas distribution station" 1 st quarter	
"Damage of radio relay communication line" 1 st quarter	
"Damage of fiber optic communication line" 2 nd quarter	
"Damage of radio relay communication line" 2 nd quarter	
"Damage of the main gas pipeline, mobile node deployment, establishment of communication during emergency operations" 3 rd quarter	

Subject	Training participants
"Damage of main cable communication line at the gas distribution station" 3 rd quarter	
"Damage of power supply equipment of the communication station" 4 th quarter	
"Damage of radio relay communication line" 4 th quarter	
Complex emergency drill of the communication service comprised by the linear department of main gas pipelines management	Communication service and the linear department of main gas pipelines management services
"Damage of fiber optic communication line" 4 th quarter	Communication service
Emergency drill for Civil Defense and Emergency Situations	Communication service and the linear department of main gas pipelines management services
Fire safety trainings	
"Fire in the line equipment room of the communication center"	Communication service
"Damage of radio relay communication line"	
Emergency drills	
Rupture of gas pipelines or production equipment of the adsorbers line 110 from valve 110-SDV – 002 to valve 110- SDV – 062	Gas transportation preparation complex
Rupture of gas pipelines or production equipment of the adsorbers line 120 from valve 120-SDV – 002 to valve 120- SDV – 062	
Rupture of gas pipelines or production equipment of the adsorbers line 210 from valve 210-SDV – 002 to valve 210- SDV – 062	
Rupture of gas pipelines or production equipment of the adsorbers line 210 from valve 220-SDV – 002 to valve 220- SDV – 062	
Destruction of the shell of reservoir no. 2 at the stabilized condensate storage, stabilized condensate spill	
Fire safety trainings	
Combustion at the stabilized condensate storage	Gas transportation preparation complex
Fire in the equipment room of the power unit of the gas transportation preparation complex	
Fire at the stationary incineration complex unit	
Emergency drills	
"Rupture of the buried delivery or return pipeline of the heating system heat network at outdoor temperature - 15°	Power and water supply service
"Rupture of household and drinking water supply line at the industrial site"	
"Threat of seasonal flooding of the CS"	
"Rupture of fire-fighting water supply system at the industrial site"	
"Emergency shutdown of the unit modular boiler as a result of circulators failure and shutdown with a defrosting of the supply pipeline at the outlet of the unit modular system"	
"Depressurization and of and oil leakage from potential transformers PS 110 kV at the CS "Portovaya"	
"Rupture of diesel fuel pipelines at the start of emergency diesel electric power station no. 5, followed by combustion"	
"Failure of power transformer KTP no. 6 due to a short circuit in winding"	
"Rupture of cooling system hose at the roof of the operating gas engine power generator unit shed"	

3.7.2 Emergency Response and Fire Drills in Volkhovskoye and Severnoye Branches

Annually the services of Volkhovskoye and Severnoye Branches develop the schedule and programs of Emergency Response and Fire Drills that are subject to be approved by the Chief Engineer – First Deputy Director of the Branch. The programs of Emergency Response Drills include reference accident scenarios from the Branch Emergency Response Plan. Drills are held quarterly with all personnel under command of the Service Head. At least once a year a comprehensive emergency response drill is held under the supervision of the Chief Engineer or Director with the view to exercise the Branch overall actions under the Emergency Response Plan.

During comprehensive emergency response drills to exercise joint actions, the efforts of Emergency Rescue Groups on the basis of the current agreement and fire fighting units of Volkhov and Vsevolozhsk Districts, Leningradskaya Region, are involved.

Based on the results of quarterly and comprehensive emergency response drills, acts are executed with the analysis of the results achieved and assessment of each participant's actions.

Annually evacuation drills and exercises on application of escape routes from buildings and structures are held in the Branches at the territory of the Compressor Station under the supervision of the Chief Engineer.

Table 21.9 gives the subjects of Emergency Response and Fire Drills for 2016 of Volkhovskoye Branch, applicable to the Project activity, Table 21.10 – the subjects of Emergency Response and Fire Drills for 2016 of Severnoye Branch.

Table 21.9.

Subjects of Emergency Response and Fire Drills for 2016, Volkhovskoye Branch

Subject	Drill Participants
Branch Comprehensive Emergency Response Drill	
<i>"Rupture of MGPL "North-European Gas pipeline -1" (North-European Gas pipeline-1) at the line pipe between pipeline valves at 498 and 511 km, with methane emission and inflammation" Management, Branch emergency response teams, ASF in accordance with ERP</i>	
Quarterly Emergency Response Drills	
Rupture of outlet manifold (outlet flowline) DN1400 CD №3 at the section upstream of valve №8-3	GCS
High-pressure gas pipeline rupture at CD №4 territory (GPU suction manifold, GPU inlet and outlet pipes, ACU discharge manifolds)	
Dust separator failure CD №4	
Fuel gas pipeline rupture CD № 3.	
Rupture of MGPL "North-European Gas pipeline -2" at the section 512-514 km with methane inflammation.	LGPOM
Rupture of MGPL " North-European Gas pipeline -1" at the section 513-543 km with methane	

inflammation.	
Rupture of MGPL " North-European Gas pipeline -1" at the section 498-511 km with methane inflammation.	
Rupture of MGPL " North-European Gas pipeline -2" at the section 543-568 km with methane emission.	
Emergency Response Drills	
"Fault at the Main Gas Pipeline SEG-2, deployment of mobile node, organization of communications during emergency response activities"	CD, LGPOM
"Fault at the main cable communication line at Gas Distribution Station"	
"Fault at fiber-optic communication line" at the section SEG-1 km 543	
"Fault at the Main Gas Pipeline SEG-1, deployment of mobile node, organization of communications during emergency response activities" 3 rd quarter	
Emergency Response Drill Civil Defense and Emergency Situations	CD and LPMMP services

3.7.3 Emergency Response and Fire Drills in Severnoye Branch

Table 21.10.

Subjects of Emergency Response and Fire Drills for 2016, Severnoye Branch

Quarterly Emergency Response Drills	
"Rupture at the linear section of MGPL " North-European Gas pipeline I " between valve yards № 596-3 (596,3 km) and № 623-3 (622,9 km) with methane emission with gas inflammation (without gas inflammation)"	Dispatcher Service, LGPOM(RoW-Operating and Maintenance Service), MTE
"Rupture at the linear section of MGPL " North-European Gas pipeline II " between valve yards № 655-4 (654,9 km) and № 684-4 (683,5 km) with methane emission with gas inflammation (without gas inflammation) "	Dispatcher Service, LGPOM, MTE
"Rupture at the linear section of MGPL " North-European Gas pipeline I " between valve yards № 21-3 (715,7 km) and № 742-3 (741,7 km) with methane emission with gas inflammation (without gas inflammation) "	Dispatcher Service, LGPOM, MTE
"Rupture at the linear section of MGPL " North-European Gas pipeline II " between valve yards № 742-4 (741,7 km) and № 771-4 (770,9 km) with methane emission with gas inflammation (without gas inflammation) "	Dispatcher Service, LGPOM, MTE

3.8 Emergency Alert Procedure

Branch Dispatcher Actions on Emergency Notification

On receipt of emergency alert from process compressors' operator, pipeline walkers, CS shift engineers, via linear telecontrol system (LTS), by phone messages from witnesses, from Central Dispatcher Service (CDS), the Dispatcher shall:

- verify the reliability of information according to LTS or ACS (automatic control

systems) telemetry data, assess the situation;

- specify the phone number from which the information was received, record the time of the call and full name of the respondent;
- ascertain the supposed accident location – in the open terrain, in the woods, in the marshland, the name of the nearest inhabited locality, remoteness from roads and populated areas;
- clarify the accident mode (with inflammation or without);
- announce "Emergency Alert" and start to notify the Branch management and officials according to the sequential number specified in the Emergency Communication Flow Chart;
- after the Branch management approval, notify the duty officer of ASF "Safety Service" Ltd by phone number 8(812)984-89-11.

Notification of personnel and emergency response teams is carried out in two ways: by telephony communication (city, mobile, gas) in manual dialing mode and via the multichannel automated complex "Rupor" (horn). Automatic redial by the automated system "Rupor" is carried out in according to the approved "Directory of call recipients of automated notification by "Rupor" system".

Emergency Notification Procedure

During working hours:

- The Dispatcher gives a voice signal from WKS via Public Address/General Alarm System: "ATTENTION! This is Dispatcher. EMERGENCY ALERT". The message is repeated twice with 30 sec interval.
- During emergency response drills the Dispatcher gives a voice signal: "ATTENTION! This is Dispatcher. EMERGENCY RESPONSE DRILL IS ONGOING". The message is repeated twice with 30 sec interval.
- By telephony or mobile communication the Dispatcher gives a voice signal "EMERGENCY ALERT".
- When using the multichannel automated complex "Rupor", the following messages are transmitted:
 - in the event of emergency: "Attention! EMERGENCY ALERT! All report to the working places!". To confirm the received information press "1";
 - during drills: "Attention! Emergency response drill is ongoing!". To confirm the received information press "1";

- when testing notification system: "Attention! Notification system test!". To confirm the received information press "1".

Outside of working hours:

– By telephony or mobile communication the Dispatcher transmits a voice message "EMERGENCY ALERT".

– When using the multichannel automated complex "Rupor", the following message is transmitted: "Attention! EMERGENCY ALERT! All report to the working places!". To confirm the received information press "1".

To ensure uninterrupted power supply, CS "Portovaya" is equipped with emergency Diesel generators that enable to support the operation of the main process equipment under complete blackout due to disconnection from the external power supplies of the regional power supply system.

After emergency response and recovery operations, inspection of buildings and structures for compliance with production and safety requirements, to execute documentation and obtain authorization to put the facility into operation.

Evacuation plan of CS "Portovaya" has been presented.

Public Safety

Elimination of equipment seal failure and prevention of natural gas accidental emissions in the main gas pipelines system are ensured by a package of technical solutions and organizational decisions.

Technical solutions anticipate:

– gas pipelines installation of longitudinally electric-weld (LSAW) pipes manufactured of killed carbon and low-alloyed steels;

– underground pipes laying at depth not less than 1.0 m above the outer generating lines of the pipe, with account for the terrain relief;

– gas pipeline floating-up resistance at watered grounds and boggy area by means of ballasting arrangements;

– gas pipelines protection from underground corrosion by protective coatings and electrochemical (cathodic) protection (CP) equipment. Cathodic protection stations are installed for the purpose of main gas pipelines cathodic protection. Potential measuring is carried out at the test points installed at the route with 1 km interval;

– fitting gas pipelines with protective casings at motor road crossings;

– continuous pressure monitoring along the gas pipelines route.

Organizational decisions anticipate:

1) 25 m gas pipeline protected zone (from the outer gas pipelines axes of the right of way), where the following is forbidden without LPMMPPL management approval:

- to erect any built structures;
- to plant trees and bushes, store feeding stuff;
- to build motor crossings, arrange parking lots, collective gardens;
- to carry out reclamation earth work;
- to carry out construction works and blasting, soil levelling.

2) continuous control of the proper condition of the gas pipelines protected zone and the zone of minimum allowed distances to structures and other facilities;

3) marking of the gas pipeline route, places of aboveground equipment installation and protected zone by signs according to SNiP 2. 05. 06-85□

4) periodic inspections of pipelines and valving (walkthrough frequency – twice a month, check flights with laser leak detection system – 4 times per year), their technical maintenance and current repairs by LGPOMLMS;

5) periodic comprehensive inspection of pipelines and valving;

6) periodic cleaning of gas pipeline interior as per schedule drawn up by the Company Main Gas Pipelines Maintenance Department;

7) pipelines overhauls;

8) annual scheduled preparation of the gas pipelines equipment and facilities for operation in autumn-winter conditions and for spring flood.

Rescue actions for persons caught in the emergency area

In case of emergency, the Dispatcher on duty or Shift Engineer shall alert the personnel involved in the activities at the CS territory or equipment (including third party employees carrying out activities at the facility) on evacuation by any means available.

Personnel exit routes from dangerous places and areas shall be determined depending on emergency mode, current weather conditions with special attention to the wind direction and force.

After the personnel have evacuated the CS grounds, the Dispatcher or Shift Engineer shall verify the fact and proceed according to operations chart.

The Branch Dispatcher shall determine the mode of ventilation operation in case of emergency, which includes the initiation of emergency venting, the necessity and sequence of power cutoff, shutdowns of equipment and units, shutoff of hazardous substance sources.

Rescue equipment, equipment for accident containment and accident recovery is available at each facility in number that corresponds to the facility's standard inventory (equipment schedules, lists).

For medical treatment, the Branches Portovoye, Severnoye and Volkhovskoye have a fully equipped medical station, as per regulations, with medical staff, including a physician and medical assistant (see more details in Appendix 22)

Appendix № 32-03-06-01-22

Population Health Care, Safety and Protection Management Plan

1 Purpose

The purposes of the Health Care Organization Management Plan are:

- to assess possible negative impact from Project operation on health and safety of local population;
- to develop actions to manage such an impact;
- to prevent negative impact on health of local population during Project operation;
- to develop and perform actions to provide health care for local population.

The Local Population Health Care, Safety and Protection Management Plan should be considered in combination with other Company's Plans:

- Atmospheric Emission Management Plan.
- Waste Management Plan.
- Water Resources Management Plan.
- Physical Impact Management Plan.
- Industrial Environmental Monitoring Plan.
- Environmental Management Plan.
- Emergency Preparedness and Response Plan.
- Occupational Safety Management Plan

2 Statutory and other requirements

The Health Care Organization MP has been developed in compliance with IFC PS 2 "Labor and Working Conditions", and IFC PS 4 "Health Protection and Population Safety".

According to IFC PS 4, the Company must evaluate risks and harmful impacts on health and safety of affected communities (personnel and resident population) during the whole project life cycle, develop and implement preventive and control actions compliant with the best international industry practice. Measures of risks and harmful impact prevention are preferred to those of their minimization.

The Company is required to design, construct, operate and decommission the structural elements or components of the project in accordance with good international industry practice, taking into consideration the exposure to safety hazards for the third parties or the affected community.

3 The analysis of possible impact of Project operation on local population

In course of the Project operation, the population residing in the area neighboring the territory of CS "Portovaya" and linear section of North-European gas pipeline can be exposed to the following negative impact from CS "Portovaya":

- atmospheric air emissions;
- impact on surface and underground water bodies;
- physical impact;
- possibility of industrial emergency situations.

The industrial operation of CS «Portovaya» affects components of the environment, and, consequently, the health and safety of the population.

The residential area closest to CS «Portovaya» is the Bolshoy Bor settlement of Leningrad Region, located in 3 km from CS site.

The linear section of NEGP crosses the Leningrad Region mainly through sparsely populated areas. Impact of the operation of the linear section of NEGP on the environment and population is insignificant.

The population in the area of the linear section is exposed to an impact mainly when using service driveways that have remained after the construction.

According to the Russian Federation Laws, after completion of construction, the land plots are returned to landowners, such as forestry divisions, local administrations and private individuals. The main gas pipeline RoW runs across these land plots. According to North-European gas pipeline construction project, there are no service driveways foreseen by the project, and people are using driveways remaining after the construction completion, and this prevents the revegetation of right-of-way and landscape restoration, and thus impact the environment. The Company consults local administrations and forestry divisions regarding coordination of team-work on the forest lands where main gas pipeline RoW is present.

3.1 Impact of the atmospheric air condition on population health

The detailed analysis of Project activity impact on the atmospheric air is provided in Appendix 7 – Atmospheric emissions MP.

As a result of the production equipment (gas-compressor units, power station for own needs, gas treatment installations) operation at CS "Portovaya", there are pollutants emitted into the atmospheric air.

The atmospheric air is also exposed to impact from pollutants emitted as a result of motor transport and special machinery operation at CS "Portovaya" and North-European gas pipeline RoW.

The basic guideline for atmospheric air quality is the hygienic standard – the maximum allowable concentrations (MAC) of chemical and biological pollutants to atmospheric air. The compliance with the above ensures the absence of direct or indirect impact on the population health and living conditions (as per SanPin 2.1.6.1032-01 “Atmospheric air and air in closed premises, sanitary protection of air. Hygienic requirements to the quality of atmospheric air in populated areas”).

The Wastes Generation and Disposal Limits Book (PNOOLR) for pollutants to atmospheric air from CS «Portovaya» and linear section of North-European gas pipeline stipulates that at this moment the polluting emissions from Project activity do not cause any significant negative impact on the atmospheric air of populated (residential) areas.

The main pollutants emitted into the atmospheric air are: methane, carbon oxide, nitrogen dioxide, nitrogen oxide, solid particles (dust).

Table 22.1 describes the impact of the indicated pollutants on the human body.

Table 22.1 shows the MAC_{o.t.m.} values, - single maximum admissible concentration of chemical substance in the air of populated areas, mg/m³. This concentration being inhaled during 20-30 minutes should not cause any reflex response in a human body.

Table 22.1.

Impact of atmospheric air pollutants on the human body

Pollutant name	Class of hazard	MAC_{o.t.m.} mg/m³	Characteristics of impact on the human body	Safety measures
Methane (CH ₄)	-	50 (SRLI)	Methane is neutral, only a very high concentration can cause intoxication. The first signs of intoxication are heart acceleration, respiratory volume increase, dystaxia – occurring at a concentration of 25-30% volume of methane in the air. Higher concentrations of methane cause headache. The main hazard caused by methane for humans relates to hypoxia (oxygen deficiency) and asphyxia (suffocation), which occur at a deficit of the oxygen in the air when it is	In case of an excess of the methane maximum admissible concentration in the working area, a preisolating gas-mask usage is necessary. At the spots of the potential gas contamination it is prohibited to use open fire, to execute sparking operations, to warm the materials up to the auto-ignition temperature of combustible materials. In case of suffocation caused by natural gas, the person injured must be immediately removed from the gas contamination

Pollutant name	Class of hazard	MAC_{o.t.} m, mg/m³	Characteristics of impact on the human body	Safety measures
			displaced by methane.	area, the clothing preventing breath must be unbuttoned, fresh air inflow must be provided for, and it is necessary to consult a doctor.
Carbon oxide (CO)	4	5	Carbon oxide decreases the ability of hemoglobin to transmit and supply oxygen, obstructs cerebation and cardiac performance, can cause a heart attack. Acute intoxication can cause neurological and cardiovascular complications.	Precautionary measures comprise: defining the localization of carbon oxide sources through equipment sealing, provision for effective air exchange. Individual protection measures are to be taken, that is filtering protective masks and oxygen isolating gas masks usage. In case of carbon oxide intoxication, the person injured must be immediately removed from the gas contamination area, fresh air inflow must be provided for and it is necessary to consult a doctor.
Nitrogen oxide (NO),	3	0.4	Nitrogen oxide transforms into nitrogen dioxide in course of chemical reactions. The latter causes strong irritation of respiratory mucous tunic, as well as sensory (amblyopia and hyposmia), functional and pathological effects.	Sanitary actions comprise: high-level ventilation, sealing, airing; usage of individual respiratory protection equipment, compliance with safety and emergency procedures. Preventive measures: individuals with chronic respiratory diseases are not allowed to work with nitrogen dioxides.
Nitrogen dioxide (N ₂ O)	3	0.2		
Suspended particles (dust)	3	0.5	Inhalation of dust may cause a respiratory disease (bronchitis, pneumoconiosis) or a general reaction (allergy and intoxication). Nonspecific action of dust manifests as a disease of upper respiratory passages, conjunctiva, skin.	Individual protection equipment must be used during the work. It is significant for the health corrective system to comprise medical monitoring of the health condition of the population.

According to the SanPiN 2.2.1/2.1.1.1200-03 "Sanitary protective zones and sanitary classification of enterprises, buildings and other facilities" and in order to provide for the population safety according to the Federal Law of March 30, 1999 no. 52-FZ "On sanitary and

epidemic welfare of population", around the facilities and plants that impact the environmental conditions and health of human individuals, a special area of special treatment is set (hereinafter, sanitary protection zone (SPZ)), of a size that provides for a decrease of pollution (chemical, biological, physical) impact on the atmospheric air compliant to the values set by hygienic standards, and, in case of hazard class I and II enterprises, both to the values set by the hygienic standards and to the values of acceptable population health risk. The functional purpose of the sanitary protection zone is a protective barrier that maintains the population safety level of the facility operation as per normal. For compressor installations, sanitary clear zones are established (sanitary freeways).

According to the SanPiN 2.2.1/2.1.1.1200-03, the recommended sanitary clear zone width for compressor stations is 700 m.

In compliance with the Validation project of the SPZ size estimate, the sanitary clear zone of CS «Portovaya» is 2200 m in all directions from the border of industrial site. Such size of SPZ ensures the highest safety for population health.

3.2 Impact of the water resources condition on the health of local population

CS «Portovaya» impact on the water resources is as follows:

- ground water intake from artesian wells in order to satisfy the drinking and household and hygienic needs;
- discharges of treated wastewater into a surface water body (Portoviy Creek).

The details of this impact are outlined in the Water Resources MP (Appendix 8)

3.2.1 Ground water intake

The source of household and drinking water of CS «Portovaya» are two water supply artesian wells (1 operating and 1 reserve well).

The hydrogeological conditions of CS «Portovaya» situation area are such that there is a hydraulic connection between CS «Portovaya» and the Bolshoy Bor settlement areas – the water bearing formation direction being from CS «Portovaya» site to the Bolshoy Bor settlement. This is why the natural water quality in the artesian wells of CS «Portovaya» can affect the water quality in the Bolshoy Bor settlement drinking wells used for drinking by the settlement population.

Table 22.2 describes the impact of the primary pollutants in the drinking water on the human body.

3.2.2 Wastewater discharge

The flows of household and surface treated wastewater and treated drainage water of CS «Portovaya» are merged and discharged into the nearest water passage, that is the Portoviy Creek, which flows 1.4 km far to the Portovaya Bay of the Gulf of Finland.

As a result of the wastewater discharge, the following contaminant materials get into the Portoviy Creek: ammonium nitrogen, nitrate nitrogen, phosphorus, anion-active surface compounds (AASC), petroleum products, phenols, chlorides, sulfates, iron, manganese, and microorganisms: coliform bacteria, coliphages, worm ova, pathogenic bacteria.

The results of IEC of waste water in 2013-2016 established that waters discharged to the Portoviy Creek are effluents treated to standard quality, i.e. there are no exceedance of concentration limits admissible for the general purpose reservoir Portoviy Creek. There is no cumulative effect from waste water discharge.

The Portoviy Creek is not a water body used for household and drinking or culture and domestic purposes, and is not used by local population for domestic, drinking or recreational needs.

Therefore, a negative impact from waste waters on local population health is out of question.

Table 22.2.

Impact of the contaminant materials in the water environment on the human body

Pollutant name	Class of hazard	MAC, mg/l	Limiting harmful index (LHI) ¹	Characteristics of impact on the human body	Safety measures
Inorganic substance:					
Phosphate phosphorus	3	3.5	Organoleptic	Disorders of enzyme systems activity and metabolism; digestive tract and nervous system involvement	In case of the substance entering the body through the mouth, it is necessary to clear the digestive tract as soon as possible: to induce vomiting, than do a stomach lavage, take recovered carbon and consult a doctor.
Manganese	3	0.1	Organoleptic	Fatigability, somnolence, faintness, depressive position	
Total iron	3	0.3	Organoleptic	Hepatic and blood disorders, allergic reactions, reproduction involvement, capillary damage	
AASC, ASC	-	0.5	-	Disorders of protein, carbohydrate and fat metabolism; dysimmunity, allergy progression, cerebral, hepatic, renal, pulmonary involvement	
Phenols	-	0.25	-	Amyotrophy, peptic ulcer	
Petroleum products	-	0.1	-	Central nervous system disorder; skin damages	
Aluminium	2	0.5	Sanitary and toxicological	Central nervous system and renal functioning disorders, osteoporosis	
Barium	2	0.1	Sanitary and toxicological	Central nervous system and cardiovascular system disorders, hematogenesis disorder	
Beryllium	1	0.0002	Sanitary and toxicological	Digestive tract involvement	
Boron	2	0.5	Sanitary and toxicological	Intestine and gaster irritation, boric entiritis, hepatic, renal and nervous system involvement	
Cadmium	2	0.001	Sanitary and toxicological	Cardiac muscle involvement, oncological diseases	
Copper	3	1	Organoleptic	Renal and cardiac muscle involvement	
Molybdenum	2	0.25	Sanitary and toxicological	Growth impairments, anaemia, arthragra	
Arsenic	2	0.05	Sanitary and toxicological	Central nervous system and capillary involvement; oncological diseases	
Nickel	3	0.1	Sanitary and toxicological	Hepatic and skin involvement	
Sulphates	4	500	Organoleptic	Laxative action, gester functioning disorder, chole- and	

Pollutant name	Class of hazard	MAC, mg/l	Limiting harmful index (LHI) ¹	Characteristics of impact on the human body	Safety measures
Fluorides	2	1.5	Sanitary and toxicological	urolithiasis progression Dental fluorosis, arthritis and bones fluorosis; endocrine system, thyroid and pineal gland suppression; nervous disorders	
Chlorides	4	350	Organoleptic	Risk of congenital defects; carcinogenic effect (in combination with other substances)	
Nitrates	3	45	Organoleptic		
Nitrites	-	3.3	-		
Ammonium nitrogen (NH ₄ ⁺)	-	2	-	Methemoglobinemia; reduction of vitamins A, E, C, B level in the body	
Mercury	1	0.0005	Sanitary and toxicological	Torpor, insomnia, weakness of memory; renal involvement	
Lead	2	0.03	Sanitary and toxicological	Renal involvement	
Selenium	2	0.01	Sanitary and toxicological	Cardiac muscle involvement	
Strontium	2	7	Sanitary and toxicological	Tumorogenesis and radiation disease; cerebral and hepatic involvements; bones involvement and strontium rickets	
Organic substances:					
GCCH (lindane)	1	0.002	Sanitary and toxicological		In case of intoxication, emergency ambulance is to be called immediately. Before its arrival, induce vomiting, do a stomach lavage.
DDT	2	0.002	Sanitary and toxicological	Mutagenic alterations and congenital anomalies	
Microorganisms:					
TTCB		Absence	-		
TCB		Absence	-	Digestive tract involvement	At the first symptoms of the digestive tract involvement, address a doctor immediately.
Coliphages		50 in 1 ml	-		

¹ Limiting Harmful Index (LHI) — is an index characterized by the minimum non-harmful concentration in the water; in other words, it is an index that indicates the earliest and probable type of negative impact in case of the chemical substance emission in the water in a concentration above

3.3 Impact of Project waste on the health of population

Project waste management is implemented in compliance with the requirements of environmental protection laws.

The detailed information is provided in Appendix 6 – Waste Management Plan.

At present all waste generated from the CS «Portovaya» activity is temporarily collected at the CS «Portovaya» site and then transferred to licensed facilities for treatment, reclamation or disposal. At the same time, requirements to the temporary waste accumulation are complied with (segregated waste accumulation, maintenance of temporary waste accumulation sites in due condition); the waste is transferred to third party facilities in due time and in compliance with safety requirements.

Thus, a negative impact of the Project waste on the local population is possible only in case of violation of waste management rules, for example, if waste gets outside of the CS «Portovaya» site, in case of littering of the main gas pipeline route area with household garbage etc.. These situations are unlikely to happen.

3.4 Effect of CS «Portovaya» physical impact on the health of population

The Physical Impact Management Plan describes the physical impact of CS «Portovaya» (Appendix 5 to this Manual).

During the Project operation, the local population can be exposed to **noise**. The primary sources of noise at CS «Portovaya» are the following: gas treatment installations; gas-compressor units; gas coolers; captive power plants; the thermal waste treatment system. The said sources of noise operate permanently throughout the year.

Also, in course of scheduled operation and maintenance at CS "Portovaya", process emissions of gas through special flares occur, the gas being emitted at high rates accompanied with a significant outburst of acoustic energy. Such emissions are of burst type, that is, they are a source of impermanent noise. In order to reduce the acoustic power of such sources, they are equipped with noise suppressors.

Noise impact of the linear section of NEGP shall be insignificant due to the absence of permanent sources of noise (the noise level of special equipment and motor transport operating occasionally at the NEGP route is insignificant).

Noise is a general biological stimulus, that is, it affects not only the auditory organ, but also the whole body in general. The noise affects primarily the cerebral brain structures, which causes negative alteration in functions of various organs and systems. The specific impact of noise shows itself through alterations in the auditory analyzer. Any noise of a sufficient intensity and duration can lead to various levels of hearing decrease. Non-specific impact of noise shows itself through alterations of other organs and systems of the human body.

The primary sources of the **electromagnetic fields** at CS «Portovaya» are a satellite communication station, a radio-relay line and personal computers.

The primary impact of the satellite communication station equipment on the resident population is caused by the electromagnetic irradiation of radiofrequency range. Electromagnetic fields established by the sources at CS «Portovaya» are of low-intensity, under $140 \mu\text{V}/\text{cm}^2$, which is much less than the WHO standard requirements ($1000 \mu\text{V}/\text{cm}^2$). Thus, the impact of the electromagnetic fields is insignificant. Outside of the CS «Portovaya» territory, no sources of electromagnetic fields are observed.

3.5 Impact of emergency situations on the health and safety of population

Since the CS «Portovaya» and the linear section of NEGP are the hazardous industrial facilities, their operation may cause emergency situations and incidents – fire and combustion, emergencies at the gas pipelines route, the CS "Portovaya" equipment failure etc.

The local population can be harmed in case of emergency, and therefore it is necessary to follow carefully the safety rules applicable to the hazardous industrial facility, in course of the Project operation.

In order to design the industrial safety measures, the Company uses the following internal documents:

- VRD 39-1.14-021-2001 A unified system of industrial and occupational safety management of the "Gazprom" PC;
- VRD 39-1.2-054-2002 "Guidelines for technical investigation and accidents and incidents record at the hazardous industrial facilities of the "Gazprom" PC";
- Gazprom STO 2-3.5-454-2010 "Rules of main gas pipelines operation";
- STO Gazprom 18000.1-002-2014 "Identification of hazards and risk management";
- Gazprom Transgaz Saint-Petersburg STO 16-02-2011 "Organization and implementation of emergency response drills";
- R Gazprom Transgaz Saint-Petersburg 02-2013 "Safety, health and environmental protection manual".

There are emergency response plans to be applied in case of emergency. These plans are worked out at CS "Portovaya":

- Accident containment and elimination plan at hazardous industrial facility "Compressor station site of Portovoe LPMMP" including action plan in case of emergency situations at CS "Portovaya", as well as accident elimination procedure.

– Accident containment and elimination plan at hazardous industrial facility "Main gas pipeline section of Portovoe LPMMPL " including action plan in case of emergency situations at main gas pipeline section of Portovoe LPMMPL, as well as accident elimination procedure.

The Emergency Preparedness and Response Plan is developed in the Company (Appendix 21).

4 Management and monitoring

4.1 Population health care management

The medical service together with PR and MM service department of the Company plans the implementation of sanitary-educative activities for the population of the Bolshoy Bor settlement in the Vyborg district of the Leningrad region.

The medical service submits to the PR and MM service department the data about health care and prevention of mass viral and contagious diseases: about vaccination necessity, seasonal diseases, tick activity periods and etc.

Based on the data received, the PR and MM service department prepares the information materials (leaflets, posters, placards) to be further placed on the special Company board in the Bolshoy Bor settlement.

4.2 Monitoring of environment conditions' impact on the health and safety of local population

4.2.1 Atmospheric air quality monitoring

According to the requirements of SanPiN 2.1.6.1032-01, "Atmospheric air and air in closed premises, sanitary protection of air. Hygienic requirements to the quality of atmospheric air in populated areas", the Company shall take measures for the maximum possible decrease of pollutants emission, and regularly monitor the atmospheric air quality.

The Company performs regular instrumental monitoring of contaminant emissions at the sources of such emissions in order to monitor the impact level from Project activity to the atmospheric air and to prevent the impact on the health of personnel and local community.

The primary contaminant materials are monitored – that is, methane, carbon oxide, nitrogen dioxide, nitrogen oxide.

The results of IEC of emissions at the sources shows no excess of contaminants concentrations. The content of polluting substance (PS) in the industrial emissions of CS "Portovaya" is matching the requirements of standards:

– GN 2.2.5.1338-03 "Maximum admissible concentrations (MAC) of contaminants in the atmospheric air of populated areas",

– GN 2.1.6.2309-07 "Approximate safe levels of impact (ASLI) from contaminants in the atmospheric air of populated areas"

According to the prescriptions of the Health, Safety and Environmental Protection Manual, it is also necessary to monitor the emissions of sulphur dioxide, solid particles of fraction size 2.5 µm and 10 µm (hereinafter SP 2.5 and SP 10).

According to the sanitary requirements, an additional monitoring of pollutants not indicated in the sanitary code and practices is carried out in case of nonspecific commodities production at the industrial facilities of chemical industry.

SP 2.5 and SP 10 have been monitored for 3 years, in course of the facility commissioning. The results of observation indicate no excess of SP 2.5 and SP 10 content in the atmospheric air of the CS "Portovaya" SPZ and at the border of the Bolshoy Bor settlement.

At CS «Portovaya» gas flaring is executed of natural gas containing a minimum quantity of sulphur (being a part of hydrogen sulphide, H₂S), that is why sulphur dioxide is absent in the emissions of CS "Portovaya". A three-year monitoring of sulphur dioxide (in course of the facility commissioning) has shown this contaminant absence in the in the atmospheric air of the CS "Portovaya" SPZ and at the border of the Bolshoy Bor settlement.

The results of IEC of emissions within sanitary-protection zone (SPZ) of CS "Portovaya" confirms the absence of excessive concentrations of contaminants in the atmospheric air of the Bolshoy Bor settlement and at the border of SPZ.

4.2.2 Monitoring of underground water

The water supply for domestic and drinking needs should be performed in accordance with the requirements of the SanPiN 2.1.4.1074-01 "Drinking water. Hygienic requirements to the water quality in the central water supply systems. Quality control", whereby drinking water is to be epidemically and radiologically safe, non-harmful by its chemical composition, and have favorable organoleptic qualities.

For the purpose of a ground water quality evaluation the Company is regularly implementing the control of water in artesian wells at CS "Portovaya" on combined, microbiologic and radiological parameters, as well as the concentrations of organic and inorganic substances. The control program is provided in Appendix 13.

The results of IEC of potable water quality established absence of excessive MAC of contaminants in the water from artesian wells.

The requirements of SanPiN 2.1.4.1074-01 are fulfilled.

Provision for the radiological safety of the ground water. According to SanPiN 2.1.4.1074-01, the permissible doze of Radon-222 in the drinking water is 60 Bq/kg. Because in the water of the CS «Portovaya» artesian wells the specific activity of radon-222 is

340 Bq/kg, the Portovoye Branch has installed a radon removal plant in the area of the water wells as part of the drinking water treatment plant equipment. After treatment at the radon-222 removal plant, the artesian wells water becomes radiologically safe, and radon activity decreases to a standard value.

Thus, ground water used for drinking needs of the CS «Portovaya» personnel and the Bolshoy Bor population is radiologically safe. This is confirmed by radiological surveys of water, performed by the Company.

In order to evaluate the sufficiency of ground water reserves, the Portovoye Branch monitors quarterly the ground water level in the wells of the Bolshoy Bor settlement. In 2016 the hydrogeological model of underground water flow in CS “Portovaya” was designed and the evaluation of water intake influence on the level of ground water reserves in the Bolshoy Bor settlement has been received. Based on the results of research a conclusion was made that the CS “Portovaya” water intake does not presently impact the level of underground water in the Bolshoy Bor settlement and after putting the artesian wells into operation at full capacity, the water intake influence will be insufficient. The related detailed data is provided in Appendix 8.

4.2.3 Monitoring of waste waters

General requirements to the composition and properties of the water in water bodies at the control sections and points of water usage for drinking, household and recreational purposes are set in the SanPiN 2.1.5.980-00 "Hygienic requirements to the surface water protection". According to the requirements of the said document, the Company shall take measures for prevention and elimination of surface water contamination that can lead to health problems, large-scale expansion of infective, parasitic and non-infective diseases, a deterioration of water usage conditions for the population, as well as in order to provide for design and implementation of water protection measures and for the purposes of water usage and protection monitoring.

In order to implement these requirements, the Portovoye Branch monitors the surface water bodies and wastewaters of CS "Portovaya". The Monitoring program is provided in Appendix 13.

The Company monitors the content of contaminants and microorganisms in the waste waters and sea water (Finnish Bay). The Monitoring program is provided in Appendix 13.

The results of IEC of waste water in 2013-2015 establish that waste waters discharged to the Portovyy Creek are effluents treated to standard quality, i.e. there are no exceedance of concentration limits admissible for the general purpose water reservoirs. There is no cumulative effect from waste water discharge.

The content of the chemical agents in the water of the water bodies must comply with the requirements of the hygienic standard GN 2.1.5.1315-03 "Maximum admissible concentrations

(MAC) of the chemical agents in the water bodies used for household and drinking or cultural and domestic purposes", hygienic standard GN 2.1.5.690-98 "Safe reference levels (SRL) of the chemical agents in the water of the water bodies used for household and drinking or cultural and domestic purposes".

4.2.4 Monitoring of waste management

In order to prevent negative impact of the waste on the population, the Portovoye Branch executes a regular monitoring of waste management, comprising the following:

- an assessment of waste accumulation containers technical condition (integrity, leak-tightness, marking);
- an assessment of sanitary condition of the temporary waste accumulation sites;
- observation of separate waste accumulation;
- observation of the set standards of temporary waste accumulation;
- prevention of littering of the territory adjacent to CS “Portovaya” and the residential area with the industrial and consumption waste.

According to the Schedule Plan of the "Portovoye" Branch IEC for 2016, visual inspection is executed once a quarter by the EP Engineer of the "Portovoye" Branch and every 10 days by the department supervisors of CS “Portovaya”.

The Portovoye Branch staff also visually monitors the absence of waste littering of the NEGP route area in course of pipeline patrol.

Hazardous waste management monitoring is implemented in compliance with the requirements of the Federal Law of June 24, 1998 no. 89-FZ "On industrial and consumption waste".

The corresponding municipal organization handles the waste produced due to the Bolshoy Bor settlement population activity, namely "Seleznevskoye rural settlement" of the Vyborgskiy district of the Leningrad Region.

4.2.5 Physical Impact Monitoring

- The Portovoye Branch executes a regular monitoring of noise impact levels.
- The Physical Impact Management Plan outlines the program for the levels of noise impact monitoring (Appendix 5).

The results of monitoring established no exceedance of Maximum allowed level of noise within SPZ of CS "Portovaya".

The requirements of SN 2.2.4/2.1.8.562-96 "Noise in the working space, in the premises of residential and public buildings and in the residential areas" are observed.

The monitoring of electromagnetic impact is not provided for due to the insignificance of such impact.

4.3 Management of other potential risks for local population health and safety.

Besides the hazards for the local population health resulting from the Project impact on the environment components, the risks for the local population safety can also arise in the process of the Project operation. They are:

1. *Risks, related to control of the hazardous facilities, equipment and materials (substances).*

The Company takes the following measures to manage these risks:

- Access and presence of unauthorized people at the industrial site of the Portovoye Branch facilities is allowed upon permission of the Branch management, after safety induction and with escort of person from operating personnel.
- The safety briefing for visitors includes the information about borders of hazardous areas in the CS site and requirements to comply with safety requirements while visiting them.
- Safety signs in the area of industry facilities of Portovoye Branch are set in compliance with GOST R 12.4.026-2015 - Safety colours, safety signs and signal marking (**Occupational safety standards system. Safety colours, safety signs and signal marking. Purpose and rules of application. General technical requirements and characteristics. Test methods**) and with main gas pipelines Operation Rules.
- Hazardous areas of the CS Portovaya facilities have necessary fencing, caution boards (safety signs) warning of potential hazards, restrictions or instructions for certain actions, as well as information about location of the facilities using of which is related to exception or decrease of hazardous and (or) harmful industry factors consequences.
- The area of the CS Portovaya facilities has stationary fence. The fence is of no less than 2.2 meters height in accordance with the requirements of the Rules of main gas pipelines operations and is maintained in operational condition. The number of exits (accesses) on public roads and structure of fence is defined by the Project.
- In compliance with the requirements of the Occupational Safety Rules at operation of electrical installations, all CS Portovaya premises with electrical installations are equipped by fences or barriers, preventing approach to the current-carrying parts. The safety signs on doors and inside the rooms of electrical installations warn against possible electric shock hazard and prohibiting the use of open fire according to the current regulatory documents.

Hazardous materials management is exercised in accordance with hazardous materials management Plan. (Appendix 12).

2. *Risks related to traffic.*

For the purpose of management of these risks the Company carries out the following measures:

1) Drivers regular professional training.

There are Motor transportation departments (MTD) in Branches where drivers are working, driving between CS sites and outside. All drivers take regular technical training and road-traffic safety instructions. The following types of instructions are held: pre-trip briefing (before every trip), special (off-schedule briefing) and season instructions.

Technical training and instructions are held by a chief of MTD or by an Engineer of Road-traffic safety.

First-aid medical posts of branches daily perform pre-trip medical check up of drivers. The Branches drivers also take periodic remote road-traffic safety training at the Company Educational portal, and pass tests and examinations after completion of this training.

Training department of Human Resources Management organizes such type of education as a professional development training for drivers, by results of which a driver is entitled to perform a special activity (for example, work with gas cylinders, transportation of hazardous goods, etc.) and obtains a certificate of professional recognition.

2) Regular technical maintenance (TM) of vehicles.

When a vehicle runs to a mileage requirement (in average – once a month) technical maintenance is performed by the branch own labour (80% of TM), and by the department of utility vehicles and special equipment (SSV & SMD) (10% of TM). Technical maintenance of imported equipment and buses is performed under a contract with a third-party special contractor (10% of TO).

3) For the purpose of road-traffic safety in the areas of CS the traffic is arranged in accordance with the traffic plan approved by a Branch Director. The traffic plan requirements are obligatory for drivers and all CS personnel.

3. Risks related to facilities security.

Appendix 20 is developed to manage these risks – Access Management Plan regulating security issues at the facilities.

Security of production facilities of the Company is performed by the branch of PC “Gazprom” the “North-West interregional security Department of PC “Gazprom” in Saint-Petersburg”.

Prior to employment the employees of this organization undergo a security check by the company security service in the process of which the personal data of a potential employee is verified and identified, in particular the cases of breach of job duties or abuses of power at the previous places of work (for example illegal use of force and weapon). The detailed information is given in Appendix 20.

The “North-West interregional security management of PC “Gazprom” in Saint-Petersburg” possesses sufficient staff and material resources to provide reliable protection of the Company facilities. Interaction with the local police is carried out only in extreme cases – for example, in case of sabotage attack, illegal access of unauthorized people to a facility or other illegal actions when it becomes necessary to use force and weapon.

Appendix № 32-03-06-01-23

List of company's regulatory and technical documents

1 List of company's regulatory and technical documentation

Table 23.1.

List of company's regulatory and technical documentation

Document Title	Number (Reference)
1 LIST OF REGULATORY AND TECHNICAL DOCUMENTATION AND LEGISLATION CONCERNING ENVIRONMENT PROTECTION for A BRANCH	
IFC DOCUMENTATION	
1.1 General IFC Guidelines	
Policy on Environmental and Social Sustainability	
IFC General EHS Guidelines	
1.2 IFC Performance Standards	
Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts	
Performance Standard 2: Labor and Working Conditions	
Performance Standard 3: Resource Efficiency and Pollution Prevention	
Performance Standard 4: Community Health, Safety, and Security	
Performance Standard 5: Land Acquisition and Involuntary Resettlement	
Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	
Performance Standard 7: Indigenous People	
Performance Standard 8: Cultural Heritage	
ORGANIZATIONAL DOCUMENTATION	
1.1 Federal Laws, Decrees of the RF Government, Directives of Superior Authorities (Ministries, JSC "Gazprom", etc.)	
<i>Federal Laws</i>	
On Environment Protection	No. 7-FZ dated 10.01.1002
On Atmospheric Air Protection	No. 96-FZ dated 04.05.1999
On Industrial and Consumption Waste	No. 89-FZ dated 24.06.1998
The Water Code of the Russian Federation	No. 74-FZ dated 03.06.2006
The Land Code of the Russian Federation	No. 136-FZ dated 25.10.2001
The Forest Code of the Russian Federation	No. 200-FZ dated 04.12.2006
On Sanitary and Epidemiologic Welfare of Population	No. 52-FZ dated 30.03.1999
<i>Decrees of the RF Government</i>	
On rates of payment for negative environment impact and additional coefficients	№ 913 dated 13.09.2016
On limits of emission of polluting (harmful) substances into atmospheric air and harmful physical impacts to atmospheric air	№ 183 dated 02.03.2000
On procedure of inventory of I-IV hazard class wastes (together with "Rules of inventory of I-IV hazard class wastes")	№ 712 dated 16.08.2013
On establishing Rules for protection of surface water bodies	№ 79 dated 05.02.2016
On establishing Rules for protection of underground water bodies	№ 94 dated 11.02.2016
<i>Orders of the Russian Ministry of Natural Resources</i>	

Document Title	Number (Reference)
On establishing criteria to categorize wastes according to I-IV hazards class, based on level of negative impact to the environment.	№ 536 dated 04.12.2014
On the Procedure for Development and Approval of Standard Waste Rates and Disposal Limits	No. 50 dated 25.02.2010
<i>Orders of Rospirodnadzor (Federal Service for Supervision of Natural Resource Usage)</i>	
On establishing of Federal classification catalogue of wastes	№ 242 dated 22.05.2017
TECHNICAL DOCUMENTATION	
1.2 Integrated Management System Standards	
Quality Manual	IMS Manual Part 1
Environment Protection Manual	IMS Manual Part 2
Occupational health and industrial safety Manual	IMS Manual Part 3
Integrated Management System. Occupational Health Instruction. Management Procedure	STO IMS dated 11-02-2015
Integrated Management System. Arrangements for Safe Performance of Hot Work at Sites of «Gazprom Transgaz Saint-Petersburg» LLC	STO IMS dated 11-01-2015
Integrated Management System. Gas Dangerous Work. Procedure for Management and Safe Performance	STO IMS dated 11-03-2017
Integrated Management System. Preparation and Performance of Emergency Response and Fire-Fighting Training Sessions	STO IMS dated 16-02-2011
Integrated Management System. Personnel Management. Management System of the Training Methodology Board's Activities.	STO IMS dated 28-04-01-2011
Integrated Management System. Industrial Environmental Monitoring. Performance Procedure	STO IMS dated 32-03-01-2012
Integrated Management System. Industrial and Consumption Waste. Management Procedure.	STO IMS dated 32-03-04-2016
Integrated Management System. Monitoring and Measurement. Performance Procedure	STO IMS dated 32-03-05-2017
2 LIST OF REGULATORY AND TECHNICAL DOCUMENTATION AND LEGISLATION CONCERNING OCCUPATIONAL HEALTH AND INDUSTRIAL SAFETY for A BRANCH	
ORGANIZATIONAL DOCUMENTATION	
Federal Laws, Decrees of the Russian Federation Government, Guidelines of Superior Authorities (Ministries, PC "Gazprom", and etc.)	
<i>Federal Laws</i>	
The Labor Code	No. 197-FZ dated 30.12.2001
The Code of Administrative Infractions of the Russian Federation	No. 195-FZ dated 30.12.2001
On Statutory Social Insurance against Industrial Accidents and Occupational Diseases	No. 125-FZ dated 24.07.1998
On Insurance Rates for Statutory Social Insurance against Industrial Accidents and Occupational Diseases for 2011 and Scheduled Period of 2012 and 2013	No. 331 dated 08.12.2010
On Industrial Safety of Hazardous Industrial Sites	No. 116-FZ dated 21.07.1997
On Public Sanitary and Epidemiological Welfare	No. 52-FZ dated 30.03.1999
On Fire Safety	No. 69-FZ dated 21.12.1994
On Technical Regulation	No. 184-FZ dated 27.12.2002
On Trade Union, Rights and Activity Guarantees thereof	No. 10-FZ dated 12.01.1996
On Retirement Pensions in the Russian Federation	No. 173-FZ dated 17.12.2001
On Gas Supplies in the Russian Federation	No. 69-FZ dated 31.03.1999
On Licensing of Certain Activities	No. 128-FZ dated 08.08.2001

Document Title	Number (Reference)
On Electric Power Industry	No. 35-FZ dated 26.03.2003
On Road Traffic Safety	No. 196-FZ dated 10.12.1995
<i>Decrees of the RF Government</i>	
On Approval of the Lists of Industrial Facilities, Operations, Occupations, Jobs, and Indices Entitling to Retirement Pension Benefits	No. 10 dated 26.01.1991
On New Standard Rates of Critical Admissible Loads on Women Under Manual Lifting and Handling of Goods	No. 105 dated 06.02.1993
On Regulatory Legal Instruments Containing Governmental Regulatory Occupational Health Requirements	No. 399 dated 23.05.2000
On Approval of the List of Heavy Works under a Harmful or Hazardous Working Environment, which Performance Prohibits Employment of Women	No. 162 dated 25.02.2000
On Approval of the List of Heavy Works and Works under a Harmful or Hazardous Working Environment, which Performance Prohibits Employment of Person at an Age below 18	No. 163 dated 25.02.2000
On Approval of the Regulations for Investigation and Recording of Occupational Diseases	No. 967 dated 15.12.2000
Rules for Operation of Engineering Devices at Hazardous Industrial Sites	No. 1540 dated 25.12.1998
Rules for Registration of Sites in the National Register of Hazardous Industrial Sites	No. 1371 dated 24.11.1998
Rules for Management of Activities to Prevent and Respond to Crude Oil and Oil Product Spills within the Russian Federation	No. 240 dated 15.04.2002
Regulations "On Licensing for Operation of Explosive and Fire-Hazardous Industrial Sites"	No. 454 dated 05.05.2012
On Management of Licensing for Certain Activities	No. 45 dated 26.01.2006
Regulations "On Licensing for Industrial Safety Expert Examination Activities"	No. 389 dated 22.06.2006
Rules of Gas Supplies in the Russian Federation	No. 162 dated 05.02.1998
Rules for Protection of Gas Distribution Networks	No. 878 dated 20.11.2000
On Arrangements for and Administration of Industrial Monitoring over Compliance with Industrial Safety Requirements at a Hazardous Industrial Site	No. 263 dated 10.03.1999
Regulations "On the Federal Service for Environmental, Technological, and Nuclear Supervision"	No. 401 dated 30.07.2004
On Designation of Shorter Working Hours, Annual Additional Paid Leaves, Increased Remunerations for Employees Involved in Heavy Works, Works under a Harmful and (or) Hazardous and Other Special Working Environment	No. 870 dated 20.11.2008
<i>Decrees of the RF Ministry of Labor and Social Development, Orders of the Ministry for Public Health and Social Development (Occupational Health Requirements)</i>	
On Approval of the Standards Rates of Critical Admissible Loads for Persons at an Age below 18 under Manual Lifting and Handling of Heavy Goods	No. 7 dated 07.04.1999
On Approval of the Recommendations towards Planning of Occupational Health Activities	No. 11 dated 27.02.1995
On Approval of the Recommendations towards Operation of an Occupational Health Office and Nook	No. 7 dated 17.01.2001
On Approval of the Procedure for Occupational Health Training and Examination of Employees with Organizations for Knowledge of Occupational Health Requirements	No. 1/29 dated 13.01.2003
Recommended Methodology for Development of Governmental Regulatory Occupational Health Requirements	No. 80 dated 17.12.2002
On Approval of the Recommendations towards Operation of an Authorized (Assigned) Occupational Health Officer	No. 30 08.04.1994

Document Title	Number (Reference)
On Approval of the Standard Rates of Free Supply of Washing and (or) Decontaminating Agents to Employees and the Occupational Health Standard "Support of Employees with Washing and (or) Disinfecting Agents"	No. 1122n dated 17.12.2010
On Approval of the Inter-Industry Rules for Support of Employees with Special Clothes, Special Footwear, and Other Personal Protection Equipment	No. 290n dated 01.06.2009
On Approval of the Standard Rates of Free Supply of Certified Special Clothes, Special Footwear, and Other Personal Protection Equipment to Employees with Branches, Business Units, Subsidiaries, and Entities of Gazprom Joint Stock Company	No. 43 dated 07.04.2004
On Approval of the Document Forms Required for Investigation and Recording of Industrial Accidents and the Regulations concerning Specific Features of Industrial Accident Investigations in Certain Industries and Entities	No. 73 dated 24.10.2002
On Approval of the Standard Rates and Conditions of Free Supply of Milk or Other Equivalent Foodstuffs to Employees Engaged in Operations under Harmful Working Environment, the Procedure for Compensation Payment Equal to Cost of Milk or Other Equivalent Foodstuffs, and the List of Harmful Industrial Forces, under which Impact Use of Milk or Other Equivalent Foodstuffs Is Recommended for Preventive Purposes	No. 45n dated 16.02.2009
On Approval of the List of Industrial Facilities, Occupations, and Jobs, where Employment Entitles to Free Acquisition of Therapeutic Preventive Meals Due to Harmful Working Environment, the Rations of Therapeutic Preventive Meals, the Standard Rates of Free Delivery of Vitamin Preparations and the Rules of Free Delivery of Therapeutic Preventive Meals	No. 46n dated 16.02.2009
On Approval of the Lists of Harmful and (or) Hazardous Industrial Forces and Works, which Execution Implies Preliminary and Regular Medical Examinations (Inspections), and the Procedure of the Examinations (Inspections)	No. 302n dated 12.04.2011
On Identification of Health Injury Severity under Industrial Accidents	No. 160 dated 24.02.2005
On the Document Forms Required for Investigation of Industrial Accidents	No. 275 dated 15.04.2005
On Approval of the Model Regulations of an Occupational Health Committee (Board)	No. 413 dated 29.05.2006
On Approval of the Procedure for Attestation of Jobs under Working Environment	No. 342n dated 26.04.2011
2.2 Regulations issued by Federal Authorities, PC «Gazprom» as well as Regulations of Branch, Directorate, Department, Office, Group, Unit, etc.	
Regulations for the Procedure of Approval of Industrial Safety Expert Examination Opinions	RD 03-298-99 dated 14.07.1999
Regulations for Supervision and Control Activities on the Russian Gosgortekhnadzor System	RD 04-354-00 dated 26.04.2000
Regulations for Extension of a Safe Operation Period of Technical Devices, Equipment, and Facilities at Hazardous Industrial Sites	dated 30.06.2009
Regulations for Industrial Safety Expert Examination of Hazardous Industrial Sites Operating Steam and Hot Water Boilers, Pressure Vessels, Steam and Hot Water Pipelines	RD 10-520-02 dated 23.10.2002
Regulations for Industrial Safety Expert Examination of Hazardous Industrial Sites Operating Lifting Facilities	RD 10-528-03 dated 04.03.2003
Regulations for Industrial Safety Expert Examination at Gas Supply Sites	RD 12-608-03 dated 05.06.2003

Document Title	Number (Reference)
Regulations for Reporting of the Federal Technological and Nuclear Supervision Service	RD 03-17-2006 dated 26.10.2006
Regulations for Administration of Training and Attestation of Professionals for Entities Supervised by the Federal Environmental, Technological and Nuclear Supervision Service	RD 03-19-2007 dated 29.01.2007
Regulations for Administration of Industrial Control of Compliance with Industrial Safety Requirements at Hazardous Industrial Facilities of «Gazprom Transgaz Saint-Petersburg» LLC	Decree No. 263 dated 10.03.1999 of the RF Government, Clause 3
2.3 Methodological Documents (Methodologies, Recommendations, Newsletters, etc.)	
<i>Instructional Methodologies</i>	
Instructive Methodology for Technical Inspection of Steam and Hot Water Boilers, Pressure Vessels, Steam and Hot Water Pipelines	RD 03-29-93 dated 23.08.1993
Instructive Methodology for Technical Inspection of Steam and Hot Water Boiler Metalwork	RD 10-210-98 dated 05.03.1998
Instructive Methodology for Analysis of Risks at Hazardous Industrial Sites	RD 03-418-01 dated 10.07.2001
Instructive Methodology for Technical Condition Troubleshooting and Evaluation of Remaining Vessel and Apparatus Service Life	RD 03-421-01 dated 06.09.2001
Instructive Methodology for the Procedure of Supervision over Compliance with Industrial Safety Requirements at Gas Distribution and Gas Consumption Sites	RD 13-01-2006 dated 03.11.2006
<i>Recommended Methodologies</i>	
Recommended Methodology for Identification of Hazardous Industrial Sites	Order No. 168 dated 07.04.2011
Recommended Methodology for Issue of an Industrial Safety Declaration of Hazardous Industrial Site	RD 03-357-00 dated 26.04.2000
Recommended Methodology for Administration of Industrial Control of Compliance with Industrial Safety Requirements at Hazardous Industrial Sites	RD 04-355-00 dated 26.04.2000
Recommended Methodology for Classification of Accidents and Incidents at Lifting Facilities, Steam and Hot Water Boilers, Pressure Vessels, Steam and Hot Water Pipelines	RD 10-385-00 dated 04.10.2000
Recommended Methodology for Classification of Accidents and Incidents at Hazardous Industrial Sites Controlled by Gas Supervision Agencies	RD 12-378-00 dated 22.08.2000
Recommended Methodology for Assessment of Damage from Accidents at Hazardous Industrial Sites	RD 03-496-02 dated 29.10.2002
Recommended Methodology for Classification of Accidents and Incidents under Transportation of Hazardous Substances	RD 15-630-04 dated 06.01.2004
TECHNICAL DOCUMENTATION	
2.4 Governmental and Industry-Related Regulatory Reference Documents (Standards, Rules, Instructions, Regulations, Code, etc.)	
<i>Rules (Industrial Safety Requirements)</i>	
General Industrial Safety Rules for Entities Engaged in Activities concerning Industrial Safety of Hazardous Industrial Sites	PB 03-517-02 dated 18.10.2002
Safety Rules in Oil and Gas Industry	PB 08-624-03 dated 05.06.2003
Rules for Industrial Safety Expert Examination	PB 03-246-98 dated 06.11.1998
Rules of Expert Examination of an Industrial Safety Declaration	PB 03-314-99 dated 07.09.1999
Safety Rules for Production, Storage, and Delivery of Liquefied Natural Gas at Gas Distribution Stations of Main Gas Pipelines (GDS MGP) and Motor Gas Filling Compressor Stations	PB 08-342-00 dated 08.02.2000

Document Title	Number (Reference)
Rules for Installation and Safe Operation of Hoisting Cranes	PB 10-382-00 dated 31.12.1999
Process Regulations for Attestation of Welders and Welding Engineering Professionals	RD 03-495-02 dated 25.06.2002
Rules for Installation and Safe Operation of Pressure Vessels	PB-03-576-03 dated 11.06.2003
Rules for Installation and Safe Operation of Stationary Compressor Units, Air Pipelines, and Gas Pipelines	PB 03-581-03 dated 05.06.2003
Rules for Installation and Safe Operation of Process Pipelines	PB 03-585-03 dated 10.06.2003
Rules for Installation and Safe Operation of Steam and Hot Water Boilers	PB 10-574-03 dated 11.06.2003
Rules for Installation and Safe Operation of Elevators (Towers)	PB 10-611-03 dated 11.06.2003
Safety Rules for Gas Distribution and Gas Consumption Systems	PB 12-529-03 dated 18.03.2003
Rules for Operation of Thermal Power Units	Order No. 115 dated 24.03.2003 of the RF Energy Ministry "On Approval of the Rules for Operation of Thermal Power Units")
Rules for Operation of Electric Power Consumer Units	Order No. 6 dated 13.01.2003 of the RF Energy Ministry "On Approval of the Rules for Operation of Electric Power Consumer Units"
<i>Inter-Industry Rules (Occupational Health Requirements)</i>	
Inter-Industry Occupational Health Rules for Use of Chemicals	POT RM-004-97 dated 17.09.1997
Inter-Industry Occupational Health Rules for Load Handling and Positioning Operations	POT RM-007-98 dated 20.03.1998
Inter-Industry Occupational Health Rules for Operations at a Height	POT RM-012-2000 dated 04.10.2000
Inter-Industry Occupational Health Rules (Safety Rules) for Operation of Electric Installations	POT RM-016-2001 dated 27.12.2000 RD 153-34.0-03.150-00 dated 05.01.2001
Inter-Industry Occupational Health Rules for Painting Operations	POT RM-017-2001 dated 10.05.2001
Inter-Industry Occupational Health Rules for Electric and Gas Welding Operations	POT RM-020-2001 dated 09.10.2001
Inter-Industry Occupational Health Rules for Operation of Water Supply and Sewer Systems	POT RM-025-2002 dated 16.08.2002
Inter-Industry Occupational Health Rules for Operation of Corporate Gas Systems	POT RM-026-2003 dated 12.05.2003
Inter-Industry Occupational Health Rules for Motor Transport	POT RM-027-2003 dated 12.05.2003
Regulations. Abnormally Hazardous Operations. Arrangements for Performance	POT RO-14000-005-98 dated 19.02.1998
Safety Rules for Operation of Tools and Accessories	RD No. 3.204-93 dated 30.04.1985
Evaluation of Workplace Illumination	MU 2.2.4.706-98 / MU OT RM 01-98 dated 16.06.1998

Document Title	Number (Reference)
On Approval of the Instructions for the Procedure for Application of the List of Industrial Facilities, Workshops, Occupations, and Jobs Featuring a Harmful Working Environment, where Employment Entitles to an Additional Leave and Shorter Working Hours	No. 273/P-20 dated 21.11.1975
On Approval of the List of Industrial Facilities, Workshops, Occupations, and Jobs Featuring a Harmful Working Environment, where Employment Entitles to an Additional Leave and Shorter Working Hours	No. 298/P-22 dated 25.10.1974
On Approval of the Model Regulations for Evaluation of a Working Environment at Workplaces and the Procedure for Application of the Industry Lists of Operations where Allowances to Workers for Working Environment May Be Established	No. 387/22-78 dated 03.10.1986
State Standards (GOST)	
Occupational safety standards system. Organization of training for labor safety. General rules	GOST 12.0.004-90 dated 05.11.1990
Occupational safety standards system. Operators location in a silting position. General ergonomic requirements	GOST 12.2.032-78 dated 26.01.1978
Occupational safety standards system. Operators location in a standing position. General ergonomic requirements	GOST 12.2.033-78 dated 26.04.1978
Occupational safety standards system. Industrial equipment. General safety requirements	GOST 12.2.003-91 dated 06.06.1991
Occupational safety standards system. General sanitary requirements for working zone air	GOST 12.1.005-88 dated 29.09.1988
Occupational safety standards system. Noise. General safety requirements	GOST 12.1.003-83 dated 06.06.1983
Occupational safety standards system. Noxious substances. Classification and general safety requirements	GOST 12.1.007-76 dated 10.03.1976
Occupational safety standards system. Vibration safety. General requirements	GOST 12.1.012-2004 dated 04.02.2004
Occupational safety standards system. Industrial equipment. General ergonomic requirements	GOST 12.2.049-80 dated 17.07.1980
Lighting fittings. Light requirements and test methods	GOST 54350-2011 dated 01.07.2012
Buildings and Structures. Methods for measuring the illuminance	GOST 24940-96 dated 31.07.1996
Buildings and structures. Methods for measuring the luminance	GOST 26824-86 dated 31.01.1986
Displays. Operators workplace. General ergonomic requirements and environmental requirements. Measuring methods	GOST R 50923-96 dated 10.07.1996
Display means for individual use. Methods of measurement and assessment of ergonomic and safety parameters	GOST R 50949-2001 dated 25.12.2001
Occupational safety standards system. Manufacturing processes. General safety requirements	GOST 12.3.002-75 dated 01.07.1976
Occupational safety standards system. Dangerous and harmful production effects. Classification	GOST 12.0.003-74* dated 18.11.1974
Occupational safety standards system. Explosion safety. General requirements	GOST 12.1.010-76 * dated 28.06.1976
Occupational safety standards system. Electric welding works. Safety requirements	GOST 12.3.003-86* dated 19.12.1986
Occupational safety standards system. Means of protection. General requirements and classification	GOST 12.4.011-89 dated 27.10.1989
Operation of Gas Distributions Systems, Gas Filling Stations and Points. Warehouses of Household Cylinders. Motor Gas Filling Stations	OST 153-39.3-051-2003 dated 27.06.2003
Operation of Gas Distribution Systems. Gas Filling Stations and Points	OST 153-39.3-052-2003 dated 27.07.2003

Document Title	Number (Reference)
Operation of Gas Distribution Systems. Model Operating Document Forms	OST 153-39.3-053-2003 dated 27.06.2003
Pipe-lines of industrial plants. Identification coloring, safety signs and marking screens	GOST 14202-69 dated 07.02.1969
Occupational safety standards system. Personal protective equipment against falls from a height. Full body harnesses. General technical requirements. Test methods	GOST R EN 361-2008 dated 18.12.2008
Occupational safety standards system. Personal protective equipment against falls from a height. Connectors. General technical requirements. Test methods	GOST R EN 362-2008 dated 18.12.2008
Occupational safety standards system. Personal protective equipment against falls from a height. Retractable type fall arresters. General technical requirements. Test methods	GOST R EN 360-2008 dated 18.12.2008
Occupational safety standards system. Safety colors, safety signs and signal marking. Purpose and rules of application. General technical requirements and characteristics. Methods of tests	GOST R 12.4.026-2001 dated 19.09.2001
<i>Building Code and Practices (SNIp), Sanitary Practices and Code (SanPiN), Manuals</i>	
Guide on Hygienic Assessment of Factors of Working Environment and Work Load. Criteria and Classification of Working Conditions	R 2.2.2006-05 dated 29.07.2005
Maximum Acceptable Concentrations (MAC) of Harmful Substances in Working Area Air	GN 2.2.5.1313-03 dated 30.04.2003
Tentative Safe Exposure Levels (TSEL) of Harmful Substances in Working Area Air	GN 2.2.5.2308-07 dated 19.12.2007
Maximum allowable levels (MAL) of skin contamination by harmful substances	GN 2.2.5.563-96 dated 31.4.1996
Basic Sanitary Regulations for Assurance of Radiation Safety (OSPORB-99)	SP 2.6.1.799-99 dated 27.12.1999
Ionizing Radiation, Radiation Safety	SanPiN 2.6.1.2523-09 dated 07.07.2009
Engineering and Implementation of Industrial Control over Compliance with Sanitary Regulations and Performance of Sanitary and Anti-Epidemic (Preventive) Activities	SP 1.1.1058-01 dated 13.07.2001
Daylighting and artificial lighting	SP 52.13330.2011
Hygienic Requirements for Engineering of Process Technology, Industrial Plant and Operating Tools	SP 2.2.2.1327-03 dated 23.05.2003
Office and social biddings	SP 44.13330.2011
Gas distribution systems	SP 62.13330.2011
Noise at Workplaces, in Rooms of Residential and Public Buildings and on Residential Construction Areas	SN 2.2.4/2.1.8 562-96 dated 31.4.1996
Infrasound at Workplaces, in Rooms of Residential and Public Buildings and on Residential Construction Areas	SN 2.2.4/2.1.8.583-96 dated 31.4.1996
The sanitary norms of industrial vibration, vibration of residential and public buildings	SN 2.2.4/2.1.8.566-96 dated 31.4.1996
Hygienic requirements for hand tools and organization of work	SanPiN 2.2.2.540-96 dated 04.07.1996
Hygienic Requirements for Daylighting, Man-Made Lighting and Combined Lighting of Residential and Public Buildings	SanPiN 2.2.1/2.1.1.1278-03 dated 08.04.2003
Hygienic Requirements for Personal Computers and Organization of Work	SanPiN 2.2.2/2.4.1340-03 dated 30.05.2003
Hygienic Requirements for Organization of Work at Copying and Duplicating Equipment	SanPiN 2.2.2.1332-03 dated 28.05.2003
Hygienic Requirements for Air Ion Composition in Industrial and Public Rooms	SanPiN 2.2.4.1294-03 dated 22.04.2003
Hygienic requirements to occupational microclimate	SanPiN 2.2.4.548-96 dated 01.4.1996

Document Title	Number (Reference)
Hygienic requirements for the conditions of work of women	SanPiN 2.2.0.555-96 dated 28.10.1996
Occupational safety in construction part one. General requirements	SNiP 12-03-2001 dated 23.07.2001
Occupational safety in construction part two. Building construction	SNiP 12-04-2002 dated 17.09.2002
Main pipelines	SNiP III-42-80 dated 16.05.1980 SNiP 2.05.06-85 dated 13.12.1985
Corrosion Protection of Structural Units	SNiP 2.03.11-85 dated 30.08.1985
Corrosion Protection of Structural Units and Constructions	SNiP 3.04.03-85 dated 13.12.1985
Water Supplies. Exterior Systems and Facilities	SNiP 2.04.02-84 dated 27.07.1984
Process Equipment and Process Pipelines	SNiP 3.05.05-84 dated 07.05.1984
Automation Systems	SNiP 3.05.07-85 dated 30.03.1985
Electrical Devices	SNiP 3.05.06-85 dated 11.12.1985
Storage buildings	SNiP 31-04-2001 dated 9.03.2001
Cruder Oil and Oil Product Warehouses. Fire-Fighting Code	SNiP 2.11.03-93 dated 26.04.1993
Protective Sanitary Zones of Water Supply Sources and Drinking Water Pipelines	SanPiN 2.1.4 1110-02 dated 26.02.2002
<i>Industry Building Code (VSN)</i>	
Instructions for Repair of Defective Pipes of Main Gas Pipelines with Polymer Composite Materials, except for i. 4.1	VSN 39-1.10-001-99 dated 05.03.2000
Regulations for Technical Inspection and Control of Overhead Crossing Conditions at Main Gas Pipelines	VSN 39.1-10-003-2000 dated 14.06.2000
Directions for Design of Insulator Pieces at Main Pipelines and Flow Lines	VSN 39-1.8-008-2002 dated 25.10.2002
Directions for Application of Insulator Pieces for Gas Pipelines	VSN 39-1.22-007-2002 dated 15.01.2002
<i>In-House Documents of PC «Gazprom» and «Gazprom Transgaz Saint-Petersburg» LLC</i>	
Industrial Safety Declaration of Hazardous Industrial Sites of a Branch	Federal Law No. 116-FZ dated 21.07.97, Article 14
On Development of a Corporate Occupational Health Activity Certification System for Subsidiaries and Entities of JSC "Gazprom"	Order No. 222 dated 02.10.2006 of PC «Gazprom»
Unified Occupational Health and Industrial Safety Management System of JSC "Gazprom"	VRD 39-1.14-021-2001 dated 01.04.2001
Regulations for Industrial Control over Compliance with Industrial Safety Requirements at Hazardous Industrial Sites of JSC "Gazprom"	dated 29.12.1999
Instructions for Technical Investigation and Recording of Accidents and Incidents at Hazardous Industrial Sites of PC «Gazprom» Controlled by the Russian Gosgortekhnadzor	VRD 39-1.2-054-2002 dated 05.02.2002
Main Gas Pipeline Operation Rules	STO Gazprom 2-3.5-454-2010 dated 24.05.2010
Regulations for Operation of Gas Distribution Stations at Main Gas Pipelines	VRD 39-1.10-069-2002 dated 15.10.2002
Operation Rules for Auxiliary Power Plants at Sites of JSC "Gazprom"	VRD 39-1.10-071-2003 dated 01.01.2003

Document Title	Number (Reference)
Regulations for Engineering and Control of Compliance with Industrial Safety Requirements and Operability Support of Unified Gas Supply System Sites of JSC "Gazprom"	STO Gazprom 2-3.5-032-2005 dated 01.06.2005
Regulations for Engineering and Control of Operability Support and Safe Operation of Gas Distribution Systems	STO Gazprom 2-3.6-033-2005 dated 27.05.2005
Company Standard "Model Instructions for Safe Performance of Hot Work at Gas Sites of PC «Gazprom»"	STO 14-2005 dated 01.11.2005
Maintenance Procedure for Submerged Water Barrier Crossings of Main Gas Pipelines	RD 51-3-96 dated 10.06.1996
Ruling Document for Pipe Welding Process under Execution of Repair and Recovery Works at Gas Pipelines (Except for Clauses 3.1, 8.9 and 8.12, 2.5, 2.6)	RD 558-97 dated 25.02.1997
Safety Instructions for Production, Storage, Transportation (Carriage) and Use of an Odorant	dated 23.03.1999
Methodology for Operability Evaluation of Beam Crossings of Main Gas Pipelines over Minor Rivers, Brooks, and Other Barriers	VRD 39-1.10-016-2000 dated 01.11.2000
Instructions for Operation and Troubleshooting of Gas Pipeline Fiber-Optic Communication Link	VRD 39-1.15-009-2000 dated 15.02.2000
Liquefied Natural Gas (LNG) Equipment. General Technical Requirements for Operation of Storage, Transportation, and Gasification Systems	VRD 1.10-064-2002 dated 14.03.2002
Regulations for the Operating Procedure of the Industrial Safety and Troubleshooting Quality Assurance System of JSC "Gazprom"	STO Gazprom RD 1.14-099-2004 dated 23.12.2004
Regulations for Expert Examination of Front-End Engineering and Design Documentation of JSC "Gazprom"	STO Gazprom 2-2.1-031-2005 dated 23.05.2005
Model Technical Requirements for Design of Compressor Stations, Booster Compressor Stations, and Underground Gas Storage Compressor Stations	VRD 39-1.8-055-2002 dated 26.02.2002
Instructions for Pre-Repair Surveying of Compressor Station and Booster Compressor Station Process Pipelines and Connecting Loops of JSC "Gazprom"	dated 16.09.2005
Instructions for Excavation under Repair of Insulation Coatings of Compressor Station and Booster Compressor Station Process Pipelines and Connecting Loops of JSC "Gazprom"	dated 16.09.2005
Instructions for Removal of Insulation Coatings under Repair of Compressor Station and Booster Compressor Station Process Pipelines and Connecting Loops of JSC "Gazprom"	dated 16.09.2005
Instructions for Application of Insulation Coatings under Repair of Compressor Station and Booster Compressor Station Process Pipelines and Connecting Loops of JSC "Gazprom"	dated 16.09.2005
Instructions for Industrial Safety Expert Examination of Insulation Coatings under Repair of Compressor Station and Booster Compressor Station Process Pipelines and Connecting Loops of PC «Gazprom» in order to Extend Safe Service Lives thereof	dated 16.09.2005
Regulations for Smart Pigging of Compressor Station and Booster Compressor Station Pipes of JSC "Gazprom"	STO Gazprom 2-2.3-066-2006
Methodology for Surveying of Gas Pipeline Sections Subject to Stress Corrosion Cracking	VRD 39-1.11-020-99 dated 01.12.1999
Regulations for Control of Lubricating Oils at Compressor Stations of Gas Transport Companies of JSC "Gazprom"	STO Gazprom 2-2.4-133-2007 dated 28.12.2007
Regulations for Management of an Insulation Coating Repair System for "High Side" Pipelines and Connecting Loops of Compressor Stations, Booster Compressor Stations, and Underground Gas Storage System Compressor Stations of JSC "Gazprom"	STO Gazprom 2-2.3-163-2007 dated 28.02.2005

Document Title	Number (Reference)
Methodology for Evaluation of Actual Underground Pipeline Positions and Conditions	VRD 39-1.10-026-2001 dated 29.01.2001
Instructions for Magnetic Inspection of Line Section of Main Gas and Crude Oil and Oil Product Pipelines	VRD 39-1.11-027-2001 dated 15.01.2001
Basic Provisions concerning Automation of Gas Distribution Stations	dated 12.12.2001
Methodology for Integrated Troubleshooting of Pipelines and Process Equipment Piping of Gas Distribution Stations at Main Gas Pipelines	STO RD 1.10-098-2004 dated 01.12.2004
Procedure for Extension of Safe Service Life of Main Gas Pipeline Line Section of JSC "Gazprom"	STO Gazprom 2-3.5-045-2006 dated 26.12.2005
Procedure for Expert Examination of Technical Specifications for Equipment and Material, Attestation of Technology, and Evaluation of Corporate Preparedness for Performance of Troubleshooting and Repair Operations at Gas Transport Facilities of JSC "Gazprom"	STO Gazprom 2-3.5-046-2006 dated 28.12.2005
Design of Cathodic Protection of Underground Facilities	STO Gazprom 9.2-003-2009
Process Design Code of Main Gas Pipelines	STO Gazprom 2-3.5-051-2006 dated 30.12.2005
Instructions for Evaluation of Pipe and Connector Defects under Repair and Troubleshooting of Main Gas Pipelines	dated 28.12.2006
Instructions for Non-Destructive Welding Joint Quality Inspection Methods for Construction and Repair of Flow Lines and Main Gas Pipelines	STO Gazprom 2-2.4-083-2007 dated 20.02.2007
Instructive Methodology for Diagnostic Studies of Line Section of Main Gas Pipelines	STO Gazprom 2-2.3-095-2007 dated 28.08.2007
Instructive Methodology for Operability Evaluation of Main Gas Pipeline Sections Featuring Corrosion Defects	STO Gazprom 2-2.3-112-2007 dated 27.12.2006
Instructions for Welding of Main Gas Pipelines under Operating Pressure Equal to or Less than 9.8 MPa	STO Gazprom 2-2.2-115-2007 dated 14.03.2007
Instructions for Technology of Performance Tie-In Operations at Gas Pipelines under Pressure	STO Gazprom 2-2.3-116-2007 dated 03.04.2007
Instructions for Welding Technology of Construction and Repair of Flow Lines and Main Gas Pipelines. Part 1	STO Gazprom 2-2.2-136-2007 dated 28.06.2007
Instructions for Welding Technology of Construction and Repair of Flow Lines and Main Gas Pipelines. Part 2	STO Gazprom 2-2.2-137-2007 dated 28.06.2007
Standard Technical Requirements for Gas Turbine Compressor Units and Systems thereof	STO Gazprom 2-3.5-138-2007 dated 21.01.2008
Instructions for Installation of Lightning Arresters at Buildings, Facilities, and Utilities of JSC "Gazprom"	STO Gazprom 2-1.11-170-2007
Instructions for Integrated Surveying and Troubleshooting of Main Gas Pipelines Subject to Stress Corrosion Cracking	STO Gazprom 2-2.3-173-2007 dated 03.07.2007
Methodology for Calculation and Validation of Main Gas Pipeline Strength and Stability Factors during Operation and Maintenance Phase	STO Gazprom 2-2.3-184-2007 dated 30.10.2007
Disposal of Odorant Storage Tanks and Operation Tanks at Gas Distribution Stations, Container Cleaning at Filling Points	STO Gazprom 2-3.5-187-2008 dated 07.06.2008
Model Programs and Methodologies for Preliminary, Acceptance, and Performance Testing of Piston-Driven and Gas Turbine-Driven Generating Sets and Power Plants	VRD 39-1.10-029 - 2001 dated 03.01.2002
Regulations for an Equipment and Plant Troubleshooting System of Power Facilities of JSC "Gazprom"	STO RD Gazprom 39-1.10-083-2003 dated 23.12.2003
Regulations for the Procedure of Attestation and Selection of Power Equipment for Operation at Sites of JSC "Gazprom"	STO Gazprom RD 5.2-093-2004 dated 01.06.2004
Regulations for the Procedure of Administration by PC «Gazprom» of Control over Gas Utilization Efficiency	STO Gazprom 4-2005 dated 27.05.2005
Methodology for Extension of Safe Service Life of Explosion-Proof Motors	STO Gazprom 2-2.3-057-2006

Document Title	Number (Reference)
Instructive Methodology for Selection of Neutral Ground Mode on 6 and 10 kV grids of subsidiaries and entities of JSC "Gazprom"	STO Gazprom 2-1.11-070-2006 dated 20.03.2006
Technical Requirements for Power Supply Systems of Gas Distribution Stations	STO Gazprom 2-1.11-081-2006 dated 14.09.2006
Methodology for Troubleshooting of Direct Current Systems at Power Facilities of JSC "Gazprom"	STO Gazprom 2-6.2-086-2006 dated 25.07.2007
Methodology for Troubleshooting of High-Voltage Overhead Lines at Power Facilities of PC «Gazprom»	STO Gazprom 2-1.11-088-2006 dated 25.07.2007
Technical State Prediction for Potential Service Life Extension of Thermal Power Equipment	STO Gazprom 2-1.9-089-2006 dated 21.11.2006
Methodology for Gas Transport System Energy Audits	STO Gazprom 2-1.20-114-2007
Regulations for Service Maintenance of Ventilation, Heating, and Air Conditioning Systems at Sites of JSC "Gazprom"	STO Gazprom 2-1.9-126-2007 dated 23.04.2007
Regulations for Service Maintenance of Equipment and Plant at Power Facilities of JSC "Gazprom"	STO Gazprom 2-2.3-132-2007 dated 19.06.2007
Methodology for Evaluation of Operating Properties of Lubricating Oils	STO Gazprom 2-2.4-134-2007 dated 25.01.2008
Instructions for Investigation and Recording of Operational Failures at Power Facilities of Structural Divisions of JSC "Gazprom"	STO Gazprom 2-2.3-140-2007 dated 09.07.2007
Extension of Safe Service Life for Explosion-Proof Electric Equipment at Power Generation Sites of JSC "Gazprom".	STO Gazprom 2-2.3-142-2007
Instructions for the Procedure for Receipt from Suppliers, Transportation, Storage, Release, and Use of Methanol at Gas Production, Transportation and Underground Storage Facilities of JSC "Gazprom"	STO Gazprom 2-2.3-143-2007
Categories of Electric Consumer Devices at Industrial Sites of JSC "Gazprom"	STO Gazprom 2-6.2-149-2007 dated 24.08.2007
Instructions for Repair of Underwater Gas Pipelines using Semi-Automatic Welding Unit UPSS-1	STO Gazprom 2-2.3-159-2007 dated 07.08.2007
Instructions for Calculation and Rating of Emissions from Gas Distribution Stations (Automated Gas Distribution Stations, Gas Distribution Points), Gas Metering Stations	STO Gazprom 2-1.19-058-2006 dated 14.12.2006
Arrangements for Safe Performance of Gas-Hazardous Work at Sites of «Gazprom Transgaz Saint-Petersburg» LLC	STO 11-02-2009 dated 15.12.2009
Arrangements for Safe Performance of Hot Work at Sites of «Gazprom Transgaz Saint-Petersburg» LLC	STO 11-03-2009 dated 15.12.2009
<i>Other Regulatory Documents and Rules</i>	
Occupational health and safety management systems. Requirements	OHSAS 18001:2007 dated 01.07.2007
Electrical Installation Regulations	PUE Edition 7 dated 06.10.1999
Rules for Operation of Water Supply and Sewer Utility Systems and Facilities	MDK 3.02-2001 dated 30.12.1999
Rules for Motor Transportation of Dangerous Cargos	Approved by Order No. 73 dated 08.08.1995 of the RF Ministry of Transport
Operation and Maintenance Safety Rules for Automation, Remote Control Equipment, Computers in Gas Industry	dated 03.03.1983
Safety Rules for Enterprises and Institutions of Gas Industry	VPPB 01-04-98 dated 18.06.1998
Fire Safety Rules in the Russian Federation	PPB 01-03 dated 18.06.2003
Regulations "Operation of Industrial Buildings and Facilities"	POT RO-14000-04-98 dated 12.02.1998
Instructions for Operation and Testing of Protection Equipment Used in Electric Installations	SO 153-34.03.603-2003 dated 30.06.2003

Document Title	Number (Reference)
Fire Safety Requirements for Enterprises Operating Compressed Gas Motor Vehicles	RD-3112199-98 dated 21.05.1998.
The list of buildings, constructions, rooms and equipment subject to protection by automatic extinguishing and fire detection installation	NPB 110-03 dated 18.06.2003
Determination of categories of rooms, buildings and external installations on explosion and fire hazard	NPB 105-03 dated 18.06.2003
Cathode Protection Process System of Underground Metal Tanks	R 474-82 dated 17.04.1980
Recommendations towards Cathode Protection of Multi-String Main Gas Pipelines against Underground Corrosion	R 550-84 dated 06.10.1984
2.5 Occupational Health and Fire Safety Instructions	
<i>Standard Instructions (Industrial Safety Requirements), Occupational Health Instructions</i>	
Model Instructions for Engineering of Safe Performance of Gas-Hazardous Work	dated 20.02.1985
Model Instructions for Engineers and Technicians Responsible for Maintenance of Lifting Machinery in Good Repair	RD 10-30-93 dated 26.07.1993
Model Instructions for Persons Responsible for Safe Execution of Work by Cranes	RD 10-34-93 dated 18.10.1993
Model Instructions for Engineers and Technicians concerning Supervision over Safe Operation of Lifting Machinery	RD 10-40-93 dated 29.11.1993
Model Instructions for Safe Performance of Work by Boiler Plant Personnel	RD 10-319-99 dated 19.08.1998
Model Instructions for Persons Responsible for Safe Performance of Work by Elevators	RD 10-332-99 dated 17.12.1999
Model Instructions for Engineering of Safe Performance of Hot Work at Explosive and Fire-Hazardous Sites	RD 09-364-00 dated 23.06.2000
Instructions for Control of Carbon Oxide Content in Boiler Plant Rooms	RD 12-341-00 dated 01.02.2000
Instructions for Troubleshooting of Technical Condition of Underground Steel Pipelines	RD 12-411-01 dated 09.07.2001
Instructions for the Procedure for Examination of Documents for Acquisition of Permits and Issue of Permits by the Federal Service for Environmental, Technological, and Nuclear Supervision	RD 03-25-2007 dated 17/09/2007
Occupational Health Instructions for Occupations and Types of Work	STO Gazprom 2-3.5-454-2010 dated Clause 16.1.4 STO Gazprom Transgaz Saint-Petersburg 11-04-2010 VRD 39-1.10-006-2000 Clause 1.1.7 amending Letter No. 10-03/489a dated 22.05.2002
3 LIST OF INDUSTRIAL DOCUMENTATION CONCERNING CIVIL DEFENSE AND EMERGENCIES OF A BRANCH	
ORGANIZATIONAL DOCUMENTATION	
3.1 Federal Laws, Decrees of the RF Government, Guidelines of Superior Authorities (Ministries, JSC "Gazprom", etc.)	
<i>Federal Laws</i>	
Federal Law "On Protection of Population and Territories against Natural and Man-Made Emergencies"	No. 68-FZ dated November 11, 1994 (as amended by FZ No. 23-FZ dated 01.04.2012)
Federal Law "On Emergency and Rescue Services and Status of Rescuers"	No. 151-FZ dated August 22, 1995
Federal Law "On Radiation Safety of Population"	No. 3-FZ dated January 9, 1996
Federal Law "On Industrial Safety of Hazardous Industrial Facilities"	No. 116-FZ dated July 21, 1997
Federal Law "On Civil Defense"	No. 28-FZ dated 12.01.1998

Document Title	Number (Reference)
Federal Law "On Amendments to Legislation"	No. 122-FZ dated August 22, 2004
Federal Law "On Protection of Legal Entity Rights under Governmental Control (Supervision) and Municipal Control"	No. 294-FZ dated December 26, 2008, as amended by Federal Law No. 327-FZ dated 21.11.2011
<i>Decrees of the RF President</i>	
Decree of the RF President "On Civil Defense"	No. 643 dated May 8, 1993
Decree of the RF President "Issues of Civil Defense of the Russian Federation"	No. 794 dated May 27, 1996, as amended by No. 531 dated May 8, 2005
Decree of the RF President "On Improvement of the Unified State System for Prevention of and Response to Emergencies"	No. 991 dated August 28, 2003
Decree of the RF President "Issues of the RF Ministry for Civil Defense Matters, Emergencies and Response to Natural Calamity Consequences"	No. 868 dated July 11, 2004
Decrees of the RF Government	
Decree of the RF Government "On Approval of the Regulations for the Procedure for Use of Existing Radio and TV Broadcasting Stations for Notification and Information of the Russian Federation Population under Emergencies During Peace and War Times"	No. 177 dated March 1, 1993
Decree of the RF Government "On Establishment of Local Notification Systems in the Areas of Potentially Hazardous Facilities"	No. 178 dated March 1, 1993
Decree of the RF Government "On Inter-Industry Committee for Attestation of Emergency Rescue Units, Rescuers, and Educational Institutions for Training thereof"	No. 507 dated March 30, 1993
Decree of the RF Government "Regulations for the Standard Rates, the Procedure for Accumulation and Use of Civil Defense Properties"	No. 330-15 dated April 15, 1994
Decree of the RF Government "On Approval of the Regulations for the Procedure for Operation of Civil Defense Facilities and Properties by Privatized Enterprises, Institutions, and Entities"	No. 359 dated April 23, 1994
Decree of the RF Government "On the Procedure for Financing of Activities to Prevent and Respond to Emergency Consequences at Industrial Enterprises in Construction and Transport Industries"	No. 989 dated April 26, 1994
Decree of the RF Government "On an Industrial Facility Safety Declaration in the Russian Federation"	No. 675 dated July 1, 1995
Decree of the RF Government "On Human Resources and Facilities of the Unified State System for Prevention of and Response to Emergencies".	No. 924 dated August 3, 1996 as amended by No. 835 dated 23.12.2004
Decree of the RF Government "On the Procedure for Generation and Use of Material Resources for Response to Natural and Man-Made Emergencies"	No. 1340 dated November 10, 1996
Decree of the RF Government "On the Procedure for Collection and Exchange in the Russian Federation of Information concerning Protection of Population and Areas against Natural and Man-Made Emergencies"	No. 334 dated March 24, 1997
Decree of the RF Government "On Attestation of Emergency Rescue Services, Emergency Rescue Units and Rescuers".	No. 1479 dated November 22, 1997
Decree of the RF Government "On the Procedure for Classification of Areas under Civil Defense Groups"	No. 1115 dated September 19, 1998
Decree of the RF Government "On Registration of Sites in the State Register of Hazardous Industrial Sites"	No. 1371 dated November 24, 1998
Decree of the RF Government "On Establishment (Appointment) of Corporate Business Units (Employees) Authorized Specially to Deal with Civil Defense Issues"	No. 782 dated July 10, 1999, as amended by No. 49 dated 01.02.2005
Decree of the RF Government "On the Procedure for Installation of Shelters and Other Sites of Civil Defense"	No. 1309 dated November 29, 1999

Document Title	Number (Reference)
Decree of the RF Government "On Accumulation, Storage, and Use of Material, Equipment, Foodstuff, Medicine, and Other Resources for Civil Defense Purposes"	No. 379 dated April 27, 2000
Decree of the RF Government "On Indemnification of Expenses for Development and Performance of Civil Defense Activities"	No. 227 dated March 16, 2000
Decree of the RF Government " On Accumulation, Storage, and Use of Material, Equipment, Foodstuff, Medicine, and Other Resources for Civil Defense Purposes"	No. 379 dated April 27, 2000, as amended by No. 473 dated 15.06.2009
Decree of the RF Government "On Immediate Measures for Prevention of and Response to Emergency Crude Oil and Oil Product Spills"	No. 613 dated August 21, 2000, as amended by No. 240 dated 15.04.2002
Decree of the RF Government "On Approval of the Regulations for Management of Public Training in Civil Defense"	. No. 841 dated November 2, 2000, as amended by No. 770 dated 22.10.2008
Decree of the RF Government "On the Procedure for Management of Activities for Prevention of and Response to Crude Oil and Oil Product Spills in the Area of the Russian Federation"	No. 240 dated April 15, 2002
Decree of the RF Government "On the Governmental Committee for Prevention of and Response to Emergencies and Assurance of Fire Safety"	No. 11 dated January 14, 2003, as amended by No. 993 dated 04.12.2009
Decree of the RF Government "On Public Training in Protection against Natural and Man-Made Emergencies"	No. 547 dated September 4, 2003, as amended by No. 702 dated 08.09.2010
Decree of the RF Government "On the Unified State System for Prevention of and Response to Emergencies"	No. 794 dated December 30, 2003, as amended by No. 702 dated 08.09.2010 and No. 340 dated 18.04.2012
Decree of the RF Government "On the Procedure for Evacuation of Population, Material and Cultural Valuables to Safe Regions"	No. 303 dated June 22, 2004
Decree of the RF Government "On the Federal Service for Environmental, Technological and Nuclear Supervision"	No. 401 dated July 30, 2004, as amended by No. 767 dated 14.12.2006
Decree of the RF Government "On Delimitation of Powers Vested in Federal Executive Power Authorities concerning Assurance of Biological and Chemical Safety of the Russian Federation"	No. 303 dated May 16, 2005, as amended by No. 351 dated 22.04.2009
Decree of the RF Government "On Approval of the Regulations for State Supervision over Protection of Population against Natural and Man-Made Emergencies Undertaken by the Russian Federation Ministry for Civil Defense Affairs, Emergencies, and Response to Consequences of Natural Calamities"	No. 712 dated December 1, 2005, as amended by No. 346 dated 22.04.2009
Decree of the RF Government "On Approval of the Rules for Reservation of Drinking Water Supply Sources".	No. 703 dated November 20, 2006
Decree of the RF Government "On the Procedure for Management and Performance of State Expert Examination of Project Documentation and Engineering Survey Data"	No. 145 dated March 5, 2007
Decree of the RF Government "On Classification of Natural and Man-Made Emergencies"	No. 304 dated May 21, 2007
Decree of the RF Government "On Approval of the Regulations for State Supervision over Civil Defense"	No. 305 dated May 21, 2007, as amended by No. 268 dated 21.04.2010
Decree of the RF Government "On Approval of the Regulations for Civil Defense in the RF"	No. 804 dated November 26, 2007
Decree of the RF Government "On the Scope of and Requirements for Project Documentation Sections"	No. 87 dated February 16, 2008, as amended by No. 1044 dated 21.12.2009

Document Title	Number (Reference)
Decree of the RF Government "On Approval of the Regulations for Licensing for Operation of Hazardous Industrial Sites"	No. 599 dated August 12, 2008
Decree of the RF Government "On Approval of the Technical Regulations for Safety of Personal Protection Equipment"	No. 1213 dated December 24, 2009
<i>Executive Orders of the RF Government</i>	
Executive Order of the RF Government "On Use of Modern Mass Communication Media for the Purposes of Improved Public Training in Civil Defense, Protection against Emergencies, Fire Safety, and Public Order as well as Prompt Notification and Information of Individuals about Emergencies and Threatening Terrorist Acts"	No. 1327-r dated September 14, 2004
Executive Order of the RF Government "The Concept of the Federal System for Monitoring of Critically Important Sites and (or) Potentially Hazardous Infrastructure Facilities of the Russian Federation and Dangerous Goods"	No. 1314-R dated August 27, 2005
Executive Order of the RF Government "The Members of the Governmental Committee for Prevention of and Response to Emergencies and Assurance of Fire Safety"	No. 427-R dated March 31, 2006, as amended by No. 250-R dated 15.01.2007
Executive Order of the RF Government "On Approval of the Concept for Establishment of a System Supporting Emergency Operating Service Calls through Single Number "112" Based on Unified Emergency Control Centers of Municipalities"	No. 1240-R dated August 25, 2008
<i>Orders</i>	
Order of the Russian Ministry of Emergencies "On Enforcement of the Regulations for State Expert Examination concerning Protection of Population and Areas against Emergencies"	No. 446 dated June 23, 1995
Order of the Russian Ministry of Emergencies "On Enforcement of the Instructions for Presentation Dates and Forms of Information concerning Protection of Population and Areas against Natural and Man-Made Emergencies"	No. 382 dated 07.07.1997
Order of the Russian Ministry of Emergencies "On Approval and Enforcement of the Regulations for Operation of Civil Defense Protection Facilities"	No. 583 dated December 15, 2002
Order of the Russian Ministry of Emergencies "On Approval of the Procedure for Establishment of Non-Professional Emergency Rescue Units"	No. 999 dated December 23, 2005
Order of the Russian Ministry of Emergencies "On Approval and Enforcement of the Regulations for Operation and Maintenance of Personal Protection Equipment, Radiation, Chemical Reconnaissance and Monitoring Instruments"	No. 285 dated May 27, 2003, as amended by No. 186 dated 19.04.2010
Order of the Ministry of Emergencies "On Approval of the List of Authorized Officers Undergoing Retraining or Advanced Training at Educational Institutions of the RF Ministry of Emergencies, Advanced Training Institutions of the Federal Executive Power Authorities and Organizations, Training Methodological Centers for Civil Defense and Emergencies of the RF Constitutional Entities and at the Civil Defense Courses of Municipalities"	No. 19 dated January 19, 2004
Order of the Russian Ministry of Emergencies "On Approval of Criteria for Data on Emergencies Submitted to the RF Ministry of Emergencies"	No. 329 dated July 8, 2004
Order of the Russian Ministry of Emergencies "On Approval of a Model Site Safety Datasheet"	No. 506 dated November 4, 2004
Order of the Russian Ministry of Emergencies "On Approval of the Regulations for Development and Acknowledgment of Crude Oil and Oil Product Spill Prevention and Response Plans in the Area of the Russian Federation"	No. 621 dated December 28, 2004

Document Title	Number (Reference)
Order of the Russian Ministry of Emergencies "On Approval of the Procedure for Maintenance and Operation of Civil Defense Protection Facilities during Peace Time"	No. 575 dated July 21, 2005
Order of the Russian Ministry of Emergencies "On Approval of the Regulations for Administration of Support to Population with Personal Protection Equipment"	No. 993 dated December 21, 2005, as amended by No. 185 dated 19.04.2010
Order of the Russian Ministry of Emergencies "On Approval of the Exemplary Regulations for Corporate Business Units (Employees) Authorized to Deal with Civil Defense Issues"	No. 440 dated July 31, 2006
Order of the Russian Ministry of Emergencies "On Approval of the Regulations for Management and Maintenance of Civil Defense by Municipal Formations and Organizations"	No. 687 dated November 14, 2008
Order of the Russian Ministry of Emergencies "On Approval of the Regulations for the System and Procedure for Information Exchanges under the Unified State System for Prevention of and Response to Emergencies"	No. 496 dated August 26, 2009
Order of the Russian Ministry of Emergencies "On Approval of the Administrative Regulation of the Russian Federation Ministry for Civil Defense Affairs, Emergencies and Response to Consequences of Natural Calamities for Discharge of a Public Duty of Supervision over Compliance of the Federal Executive Power Authorities, Executive Power Authorities of the constitutional entities of the Russian Federation, Local Self-Government Authorities, Organizations as well as Officers and Individuals with the Established Requirements concerning Protection of Population and Areas against Natural and Man-Made Emergencies"	No. 382 dated August 9, 2010
Order of the Gosgortekhnadzor "On Registration of Sites in the Register of Hazardous Industrial Sites"	No. 7 dated January 11, 1999
Order of Chairman of the Management Board for PC «Gazprom» "On Presentation of Information on Hazardous Industrial Sites"	No. 9 dated 19.02.2003
Order No. 214 dated 05.12.2005 of Chairman of the Management Board for PC «Gazprom» "On Approval of the List of Employees with the Corporate Civil Defense System of JSC "Gazprom", Who Undergo Retraining or Advanced Training"	Decrees of the RF Government No. 841 dated 02.11.2000 "On Approval of Regulations for Administration of Public Training in Civil Defense" and No. 547 dated 04.09.2003 "On Public Training in Protection against Natural and Man-Made Emergencies", Orders dated 18.06.2001 and No. 19 19.01.2004 concerning the above matters
<i>Other Documents</i>	
Letter of the Russian Ministry of Emergencies "On Declassification of Building Code and Practices SNiP 2.01.51-90 "Civil Defense Engineering Measures"	No. 43-3727-14 dated November 5, 2009
Decree of the Leningrad Region Government "On the Procedure for Collection and Exchange in Leningrad Region of Information concerning Protection of Population and Areas against Natural and Man-Made Emergencies"	No. 239 dated September 28, 2007
Decree of the Gosgortekhnadzor "On Approval of the Regulations for Expert Examination of an Industrial Safety Declaration"	No. 65 dated September 7, 1999
3.2 Regulations of Branch, Directorate, Department, Office, Group, Unit, etc.	

Document Title	Number (Reference)
Regulations of the Civil Defense System of the Branch	Federal Law No. 28-FZ dated 12.02.1998 "On Civil Defense", "Regulations of Civil Defense of JSC "Gazprom"" and "Regulations of "Gas Emergencies" of JSC "Gazprom"" approved by Chairman of the Management Board for PC «Gazprom» No. AM-1936 dated 18.03.2003, requirements under Order No. 999 dated 23.12.2005 of the Russian Ministry of Emergencies "On Approval of the Procedure for Establishment of Non-Professional Emergency and Rescue Units"
Regulations for Management and Maintenance of Civil Defense of the Branch	Decree of the RF Government No. 804 dated 26.11.2007 "On Approval of the Regulations of Civil Defense in the RF"
Regulations for the Civil Defense Headquarters of the Branch	Decree of the RF Government No. 804 dated 26.11.2007 "On Approval of the Regulations of Civil Defense in the RF"
Regulations for the Civil Defense Services of the Branch	Decree of the RF Government No. 804 dated 26.11.2007 "On Approval of the Regulations of Civil Defense in the RF"
Regulations for Radiation Monitoring of the Branch	Federal Law No. 3-FZ dated 9.01.96 "On Public Radiation Safety"
Regulations for the On-Site Committee for Prevention of and Response to Emergencies and Assurance of Fire Safety	Decree of the RF Government No. 794 dated 30.12.2003 "On the Unified National System of Emergency Prevention and Response"
Regulations for the Committee for Operating Stability Improvement of the Branch.	Federal Law No. 68-FZ dated December 21, 1994, "On Protection of Population and Territories against Natural and Man-Made Emergencies", Article 146
3.3 Methodological Documents (Methodologies, Recommendations, Newsletters, etc.)	
Administrative and Instructive Methodology for Development of Management Bodies and Staff of the Corporate Civil Defense System of PC «Gazprom» for 2011-2013	Approved by Deputy Chairman of the Management Board for PC «Gazprom» on 15.11.2005
Recommended Methodology for Arrangements and the Procedure for Examination of Documentation Presented for Acknowledgement concerning Writing Off Decayed Civil Defense Protection Facilities (2007)	Letter No. 1-4-60-5-14 dated 21.06.2007 of the RF Ministry of Emergencies
Recommendations towards Management of Activities by Corporate Civil Defense System Units of Subsidiaries and Entities of PC «Gazprom» under a Radioactive Contamination Environment	dated July 27, 2006

Document Title	Number (Reference)
Recommendations towards Operation of Personal Protection Equipment under Emergencies for Employees with JSC "Gazprom"	dated July 27, 2006
Recommendations towards Preparation of Typical Sites of PC «Gazprom» for Performance of Decontamination and Degassing Operations	dated July 27, 2006
Methodology for Inspection and Assessment of Operating Technical Preparedness of Control Centers of JSC "Gazprom"	May 22, 2000
Recommended Methodology of PC «Gazprom» for Generation, Storage, Use and Replenishment of Inventories for Response to Emergencies in Emergency Regions	Moscow 2007
Recommended Methodology for Planning of Supply and Arrangements for Operation of Personal Protection Equipment Supply Points for Employees with Line Main Gas Pipeline Operation Department of «Gazprom Transgaz Saint-Petersburg» LLC	SO "Gazprom Transgaz Saint-Petersburg" LLC 2009
TECHNICAL DOCUMENTATION	
3.4 Governmental and Industry-Related Regulatory Reference Documents (Standards, Rules, Instructions, Regulations, Code, etc.)	
STO Gazprom. The Authorized Standard Rates for Storage of Personal Protection Equipment and Other Civil Defense Property as well as Emergency Rescue Fire Extinguishing Equipment at Subsidiaries and Entities of JSC "Gazprom"	I.doc. No. 50 dated September 25, 2007
STO Gazprom. The Range and Scope of Emergency Stock of Inventories for Response to Emergencies during Peace and War Times at Power Generation Sites of PC «Gazprom» dated September 18, 2009	I.doc. No. 484 dated December 10, 2008
STO Gazprom. The Methodology for Assessment of Preparedness of Corporate Staff and Resources for Prompt Response to Different Types of Emergency	I.doc. No. 457 dated July 14, 2008
Regulations for the Corporate Emergency Prevention and Response System of PC «Gazprom» ("GAZ CHS")	No. 324 dated November 10, 2011
Procedure for Preparation to Maintenance and Maintenance of Civil Defense of JSC "Gazprom", approved by order of JSC "Gazprom"	No. 324 dated November 10, 2011
Regulations for the Corporate Civil Defense System of JSC "Gazprom"	approved by Order No. 70 dated March 07, 2012, of JSC "Gazprom"
Regulations for Civil Defense Units of JSC "Gazprom"	dated December 17, 2006
"The Procedure for Preparation to Maintenance and Maintenance of Civil Defense of «Gazprom Transgaz Saint-Petersburg» LLC"	Decree No. 40 dated January 26, 2012, of "Gazprom Transgaz Saint-Petersburg" LLC
Regulations for the Emergency Prevention and Response System of «Gazprom Transgaz Saint-Petersburg» LLC	Decree No. 40 dated January 26, 2012, of "Gazprom Transgaz Saint-Petersburg" LLC
Instructions for Inspection and Assessment of the Civil Defense Status	Approved by Order No. 97 dated March 1, 2004, of the RF Ministry of Emergencies, restricted
Instructions for Inspection and Assessment of the Status of Functional and Territorial Subsystems of the Unified State System for Prevention and Response to Emergencies	Approved by Order No. 125 dated March 3, 2005, of the RF Ministry of Emergencies
3.5 Occupational Health and Fire Safety Instructions	

Document Title	Number (Reference)
Safety Instructions for Maintenance of Equipment in a Civil Defense Protection Facility	Order No. 583 dated 15.12.2002 of the RF Ministry of Emergencies "On Approval and Enforcement of the Regulations for Operation of Civil Defense Protection Facilities"
Behavior Rules for Persons Sheltered in a Civil Defense Protection Facility	Order No. 583 dated 15.12.2002 of the RF Ministry of Emergencies "On Approval and Enforcement of the Regulations for Operation of Civil Defense Protection Facilities"
4 LIST OF INDUSTRIAL DOCUMENTATION CONCERNING FIRE SAFETY OF BRANCHES	
ORGANIZATIONAL DOCUMENTATION	
4.1 Federal Laws, Decrees of the RF Government, Directives of Superior Authorities (Ministries, JSC "Gazprom", etc.)	
Federal Law "On Fire Safety"	No. 69 FZ dated 21.12.1994. Adopted by the State Duma on 18.11.1994, Amendments 1-22, the most recent dated 19.07.2009
Federal Law "Technical Regulation for Fire Safety Requirements"	No. 123 FZ dated 22.07.2008. Adopted by the State Duma on 04.07.2008.
Instruction Book for Management of Activities by Corporate Fire-Fighting Service Units of JSC "Gazprom"	Approved by Order dated 16.05.2001 of JSC "Gazprom", acknowledged by the GUGPS of the Russian Interior Ministry No. 20/2.3./1254 dated 04.04.2001
Occupational Training Program for Corporate Fire-Fighting Service Employees of JSC "Gazprom"	Approved by Gazobezopasnost LLC on 31.05.2004, acknowledged by the GUGPS of the Russian Ministry of Emergencies No. 18/8 dated 07.05.2004
Occupational Health and Industrial Safety Policies of JSC "Gazprom"	Approved by Order No. 235 dated 29.07.2009 of JSC "Gazprom"
4.2 Management Orders, Directions of PC "Gazprom", Company, Company's Branches	
Order of Director of the Branch "On Establishment of Fire-Fighting Treatment at Sites of the Branch"	PPR RF 2012
Order of Director of the Branch "On Establishment of Fire-Fighting Engineering Committee of the Branch"	PPR RF 2012
Order of Director of the Branch "On Appointment of the Persons Responsible for Fire Safety in Buildings and Rooms of the Branch"	PPR RF 2012
Order of Director of the Branch "On Establishment of the Voluntary Fire-Fighting Team"	PPR RF 2012
Order of Director of the Branch "On Training Sessions in Minimal Fire-Fighting Engineering Knowledge Involving Professionals, Employees and Workers of the Branch"	Order No. 645 dated December 12, 2007, of the RF Ministry of Emergencies
Order of Director of the Branch "On Arrangements for Maintenance and Scheduled Preventive Repair of Automatic Fire Detection, Gas Contamination Monitoring Systems and Fire Extinguishing Units at Gas Compressor Units"	Directive No. 48 dated May 22, 2009, of "Gazprom Transgaz Saint-Petersburg"

Document Title	Number (Reference)
Order of Director of the Branch "On Identification of Permanent Areas and the Procedure for Performance of Hot Work on the Premises and at the Sites of the Branch"	PPR RF 2012
Order of Director of the Branch "On the Procedure for Fire-Fighting Briefings at Business Units of the Branch"	Order No. 645 dated December 12, of the RF Ministry of Emergencies
Order "On the Procedure for Operation of Electric Heaters on the Premises of the Branch"	PPR RF 2012
Model Instructions for Arrangements for Safe Performance of Gas-Hazardous Work	Approved by Decree dated 20.02.1985 of the USSR Gosgortekhnadzor, acknowledged by the VCSPS on 20.12.2004
Regulations for Planning of, Arrangements for Work and Inspection of Preparedness at Sites and Facilities of «Gazprom Transgaz Saint-Petersburg» LLC for operation during an autumn-winter period	Approved and enforced by Order No. 389 dated 21.09.2009 of Deputy Director General of "Gazprom Transgaz Saint-Petersburg"
4.3 Regulations of Branch, Directorate, Department, Office, Group, Unit, etc.	
Regulations for Corporate Fire-Fighting Service of the Branch	Approved by Order of Director of Branch
Regulations for the Voluntary Fire-Fighting Team of the Branch	Approved by Order of Director of Branch
Regulations for Fire-Fighting Engineering Committee of the Branch	Approved by Order of Director of Branch
TECHNICAL DOCUMENTATION	
4.4 Governmental and Industry-Related Regulatory Reference Documents (Standards, Rules, Instructions, Regulations, Code, etc.)	
Decree of the RF Government No. 625 dated 25.10.06 "On Licensing of Fire Safety Activities"	Decree No. 625 dated 25.10.06 of the RF Government
Regulations for Fire-Fighting Treatment in the Russian Federation. Approved by Decree No. 390 dated April 25, 2012, of the Russian Federation Government	PPR RF 2012
Fire Safety Rules for Power Generation Enterprises	VPPB 01-02-95*
Fire Safety Rules for Enterprises and Organizations of Gas Industry	VPPB 01-04-98
Fire Safety Code (Order No. 645 dated December 12, 2007, of the Russian Ministry of Emergencies) On Approval of Fire Safety Code "Training in Fire Safety Measures of Employees with Organizations"	Order No. 645 dated December 12, 2007, of the RF Ministry of Emergencies
Fire Safety of Buildings and Facilities	SNiP 21-01-97*
Indoor Water Supply Pipeline and Sewer of Buildings	SNiP 2.04.01-85*
Water Supplies. Outdoor Networks and Facilities	SNiP 2.04.02-84*
Main Pipelines	SNiP 2.05.06-85*
Facilities of Industrial Enterprises	SNiP 2.09.03-85
Production Buildings	SNiP 31-03-2001
Storage Buildings	SNiP 31-04-2001
Office and Social Buildings	SNiP 2.09.04-87*
The systems of fire protection. Evacuation ways and exits	SP 1.13130.2009
Systems of fire protection. Fire-resistance security of protecting units	SP 2.13130.2009
Systems of fire protection. System of annunciation and management of human evacuation at fire. Requirements of fire safety	SP 3.13130.2009
Systems of fire protection. Restriction of fire spread at object of defense. Requirements to spatial layout and structural decisions	SP 4.13130.2009
Systems of fire protection. Automatic fire-extinguishing and alarm systems. Designing and regulations rules	SP 5.13130.2009

Document Title	Number (Reference)
Systems of fire protection. Electrical equipment. Requirements of fire safety	SP 6.13130.2009
Heating, ventilation and conditioning. Fire requirements	SP 7.13130.2009
Fire engineering. Fire extinguishers. Requirements to operation	SP 9.13130.2009
Fire protection system. Fire line inside. Fire safety requirements	SP 10.13130.2009
Determination of categories of rooms, buildings and external installations on explosion and fire hazard	SP 12.13130.2009
Automatic fire fighting foam systems. General technical requirements. Test methods	GOST R 50800-95
Automatic gas fire extinguishing systems. General technical requirements. Test methods	GOST R 50969-96
Fire engineering. Wheeled fire extinguishers. General technical requirements. Test methods	GOST R 51017-2009
Fire engineering. Fire pressure hoses. General technical requirements. Test methods	GOST R 51049-97
Fire fighting equipment. Portable fire extinguishers. General technical requirements. Test methods	GOST R 51057-2001
Fire equipment. Ed fire ladders to be installed outside buildings. Buildings roof railings. General technical requirements. Test methods	GOST R 53254-2009
Fire equipment. Fire escape chute. General technical requirements. Test methods	GOST R 53271-2009
Fire equipment. Fire department hand-operated ladders. General technical requirements. Test methods	GOST R 53275-2009
Automatic gas fire extinguishing systems. Cylinders and cylinder banks. General technical requirements. Test methods	GOST R 53281-2009
Occupational safety standards system. Fire safety terms and definitions	GOST R 12.1.033-81 SSBT
Occupational safety standards system. Fire engines and equipment. Graphical conventional signs	GOST 12.1.114-82* SSBT
Occupational safety standards system. Fire engineering. Safety requirements	GOST 12.2.037-78* SSBT
Fire-Fighting Automation. Maintenance Rules	RD 009-01-96
Fire-Fighting Automation Units. Maintenance and Scheduled Preventive Repair	RD 009-02-96
Model Instructions for Arrangements for Safe Performance of Hot Work at Explosive and Fire-Hazardous Sites	RD 09-364-00
Model Instructions for Safe Performance of Hot Work at Gas Sites of JSC "Gazprom"	STO Gazprom 14-2005
Main Gas Pipeline Operation Rules	STO Gazprom 2-3.5-454-2010
Electrical Installation Regulations. The Russian Ministry of Fuel and Energy. Glavgosenergonadzor	PUE
Fire Safety Rules in the Russian Federation	PPB 01-03 18.06.2003
Model Instructions for Safe Performance of Fire-Hazardous Work at Sites of JSC "Gazprom". STO PC «Gazprom» 14-2005	STO PC «Gazprom» 14-2005
4.5 Industrial Instructions (Process Regulations)	
Instructions for the Procedure for Operation of Fire Engines at the Corporate Fire-Fighting Service of Line Operation Departments of Main Gas Pipelines and Special Equipment thereof	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
Industrial Instructions for Activities of Compressor Station Personnel for Activation of Automatic Gas Fire Extinguishing Systems	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1

Document Title	Number (Reference)
Instructions for the Operation Rules for Air Foam Fire Extinguishers at Sites of the Branch	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
Instructions for the Operation Rules for Powder Fire Extinguishers at Sites of the Branch	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
Instructions for the Operation Rules for Carbon Dioxide Fire Extinguishers at Sites of the Branch	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
Instructions for the Operation Rules for Backpack Sprayer Fire Extinguishers at Sites of the Branch	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
Instructions for the Operation and Testing Procedure for Fire Hoses of the Branch	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
Instructions for the Operation Procedure for a Compressor Unit	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
Instructions for the Operation Procedure for a Equipment Test Bench (Ladders, Belts, Hose Holdbacks, Safety and Life Ropes)	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
Instructions for Operation of an Automatic Fire Extinguishing Unit at an Automatic Diesel Power Generation Plant	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 7.10.1
4.6 Occupational Health and Fire Safety Instructions	
Model Instructions for Safe Performance of Hot Work at Gas Sites of PC «GAZPROM» STO Gazprom 14-2005	STO Gazprom 14-2005
Occupational Health Instructions for Work at a Height	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 16.1
Occupational Health Instructions for a Compressor Station	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 16.1

Document Title	Number (Reference)
Occupational Health Instructions for Performance of Handling and Warehousing Operations	Decree No. 129 dated 01.07.93 of the Russian Federation Ministry of Labor, STO Gazprom 2-3.5-454-2010, Clause 16.1
Fire Safety Instructions in Household Rooms	PPR RF 2012
Fire Safety Instructions in Workshops	PPR RF 2012
Fire Safety Instructions in Operating Rooms (Operator Rooms, Central Control Boards, Control Centers, Corporate Fire-Fighting Service Communication Center)	PPR RF 2012
Fire Safety Instructions in Storage Facilities and Household Storerooms	PPR RF 2012

Appendix 32-03-06-01-24

List of ESMS key performance indicators

1 Goal

Monitoring of key performance indicators (KPI) is performed in accordance with Gazprom Transgaz Saint-Petersburg STO 32-03-05-2017 Integrated management system. Monitoring and measurements. Procedure.

KPI monitoring is executed to continuously monitor the functioning of Project environmental and social management system to forecast the evolvement and undertake, if necessary, the appropriate EHS protection measures to avoid negative environmental impact, mitigate risks and prevent hazards.

2 Statutory and other requirements

The list of ESMS KPI is developed in compliance with:

- International Standard ISO 14001:2004 Environmental management systems – Requirements and guidance for use;
- OHSAS 18001:2007 Occupational health and safety management systems – Requirements;
- International Standard ISO 9001:2008 Quality management systems – Requirements;
- IFC PS 1 – Environmental and Social Risks and Impacts Assessment and Management.

According to the provisions of IFC PS1, the effective System of Environmental and Social Management (ESMS) is a dynamic and sequential process initiated and supported by the management. The process anticipates cooperation between the Company, its employees and local population that are directly affected by the Project (affected communities), and in some cases cooperation with other parties concerned. Based on the elements of the established business management process "planning, implementation, checking and required action undertaking", ESMS uses the methodological approach to environmental and social risks and impacts management that allows for structuring and operational sequence. The effective ESMS contributes towards the stability of performance in environmental and social fields and can ensure the improvement of financial, environmental and social indicators on the whole.

The Company carries out the environmental and social assessment and creates and supports the ESMS that corresponds to the nature and scale of the Project and commensurate with the environmental and social risks and impacts related to it. The ESMS should include the following elements: philosophy; definition of risks and impacts; management programs; organization structure and competence of personnel; emergency preparedness and response planning; cooperation with the parties concerned; monitoring and inspection.

The Company records the results of the monitoring and identifies the necessary remedial actions, and takes them into account when altering the management program and plans. Based on the results obtained, the senior management takes necessary measures aimed at achievement of the Company targets, implementation of procedures and provision for their efficiency.

3 KPI monitoring implementation procedure

The KPI monitoring includes the following:

- identification of KPI;
- monitoring and measurement of KPI;
- documentation of monitoring results and their communication to the parties interested;
- an analysis of information obtained as a result of the monitoring and decision making.

ESMS KPI are quantitatively measurable characteristics of ESMS processes and procedures implementation, their values affecting the following, either directly or indirectly:

- the ability of the Company to provide the service of natural gas transportation by main pipelines, according to contractual obligations;
- the ability of the Company to comply with the statutory and corporate requirements of the "Gazprom" PC, as well as with its own requirements to the quality of the service provided, requirements to the environmental safety (EP requirements) and health safety (OH&IS requirements, and applicable international requirements).

The ESMS KPI covers the three areas corresponding to four local management systems included in ESMS (IMS – in the Company): quality management system (QMS) KPI, environment management system (EMS) KPI, Occupational Health and Industrial safety (OH&IS) KPI and social management system (SMS) KPI.

The list of EMS, QMS and OH&IS KPIs established for monitoring is provided in Table 24.1.

Based on KPI monitoring results, environmental and social issues, hazards and risks are managed, and the functioning of processes and improvement opportunities are monitored.



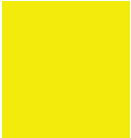

In order to implement the monitoring and measurements, the Company uses the following techniques:

- measurements by technical systems and devices with measuring functions;
- statistical techniques that comprise primary statistical data gathering in order to design federal statistical and corporate reporting forms;
- calculation methods in compliance with statutory and other requirements set;
- monitoring in course of internal audits.

An analysis of the obtained data is based on the results of KPI monitoring. After the KPI analysis, a conclusion on the efficiency of the ESMS performance is drawn. Based on the results of ESMS KPI analysis the Company can review and actualize the list of KPIs, if needed.

The KPI monitoring results and respective analysis are reported in a consolidated report. The consolidated report is prepared annually by QD PDD.

In order to indicate the extent of KPI achievement in regard to standard or planned (target) values, the following colors are used in the consolidated report:

-  standard/target (or permissible) KPI value
-  KPI has reached its standard/target value or is within permissible value limits
-  KPI has not reached its standard/target value or has exceeded its limit with an insignificant deviation (10% maximum)
-  KPI has not reached its standard/target value or has exceeded its limit with a significant deviation (more than 10%)

An activity for which KPIs are set is considered efficient, if the KPI deviation from its standard

or target values (the exceedance of their limits) does not exceed 10%.

Standard KPI value is a constant value set by existing statutory and regulatory acts, corporate requirements of the "Gazprom" PC or internal Company requirements;

Target KPI value is a value set by the corporate requirements of the "Gazprom" PC or internal Company requirements in order to achieve any goals, perform any plans or programs.

Complex calculation of the activities efficiency in the framework of any management system is as follows:

$$\Delta\text{KPIms} = \frac{\sum\text{KPI100} + \sum\text{KPI10}}{\sum\text{KPIms}} * 100\% \quad (1)$$

Where ΔKPIms – is a share of KPIs indicating efficient activities in the corresponding management system (QMS/ EMS/ UOSMS and IS);

$\sum\text{KPI100}$ – is the total number of KPIs having reached their standard or target values or with values comprised in permissible limits;

$\sum\text{KPI10}$ – is the total number of KPIs with a deviation from the standard or target value of 10% maximum;

$\sum\text{KPIms}$ – is the total number of all KPIs for which the results of monitoring have been considered.

3.1 Key performance indicators of Environmental and Social management System

List of Company's IMS KPIs are provided in table 24.1.

Table 24.1.

List of IMS key performance indicators

KPI Group	Indicator	Description	Msmnt Unit	Responsible for Monitoring
EMS KPI				
Environmental Performance	Emissions of pollutants into the atmospheric air	Emissions of pollutants into the atmospheric air within MPE limits and excess emissions	t	PDD EPD <i>(Environmental Protection Division of Prospective Development Department)</i>
	Water discharge into surface water sources	Scope of water discharge into water sources	th. m ³	PDD EPD
	Discharge of pollutants into water sources	Weight of pollutants discharged into water sources	t	PDD EPD
	Waste management activity ¹	Weight of the wastes treated (incl. those within limits and excess)	t	PDD EPD

KPI Group	Indicator	Description	Msmnt Unit	Responsible for Monitoring	
Ecologic-and-economic indicators		Waste fraction sent for dumping	%	PDD EPD	
	Accidents	Number of environmental accidents	ea.	PDD EPD	
		Wastage of natural gas during accidents	th. m ³	PDD EPD	
		Environmental damage	th. RUB	PDD EPD	
	Emission charge	Charge for emissions of pollutants into the atmospheric air, excess emissions included	th. RUB	PDD EPD	
	Effluent charge	Charge for the permissible and excess discharges of pollutants into water sources	th. RUB	PDD EPD	
	Waste disposal fee	Fee for permissible and excess waste disposal	th. RUB	PDD EPD	
	Costs for environmental documentation development and environmental analytical control (EAC)	Company costs for development of PNOOLRs (Draft Waste Generation Standards and Waste Disposal Limits), MPE standards, permissible discharge standards (PDS), SPZ, EAC substantiation (establishment) projects by dedicated laboratories	th. RUB	PDD EPD	
	EMS performance	EI and IEI	Number of detected EI and IEI ²	ea.	PDD EPD

KPI Group	Indicator	Description	Msmnt Unit	Responsible for Monitoring
indicators	Completion of environmental actions	Completion of environmental actions vs planned ones	ea., %	PDD EPD
	EC attainment	Number of EC attained and percentage of attainment	ea., %	PDD EPD
	Training	Number of employees who passed environmental compliance, waste management and EMS training	ea.	PDD EPD
Control (audit) indicators	ESG (<i>Group of environmental surveillance</i>) of the Company facilities' activity	ESG inspections carried out in the Company	ea.	PDD EPD
	IEC inspections and audits in the Company	IC inspections carried out in the Company, ad hoc inspections, EMS audits of AMD level and Branches' level	ea.	PDD EPD
UOSMS & IS KPI				
OHS (Occupational Health and Safety)	Injuries	Number of injuries suffered in a certain Branch (department, separate division, service, etc.) of the Company during a certain period of time	ea./per period	HSD
	Training	Number of persons qualified in basic OHS requirements in compliance with	ea.	HSD

KPI Group	Indicator	Description	Msmnt Unit	Responsible for Monitoring
IS (Industrial Safety)		RF Laws requirements		
		OHS requirements compliance control	Number of violations of RF OH and IS regulations during control activities	ea. HSD
		Training	Number of employees trained and certified in IS requirements in compliance with RF Laws requirements	ea. IFSS
		Equipment inspection and control testing	Number of inspections and control tests in compliance with safety regulations for a specific HIF	ea. IFSS
		IS requirements' breaches detected by Rostekhnadzor (Federal Service for Environmental, Technological and Nuclear Supervision) bodies	Number of IS requirements' breaches detected by Rostekhnadzor bodies	ea. IFSS
		Remedied breaches that previously were detected by Rostekhnadzor bodies	Number of remedied breaches that previously were detected by Rostekhnadzor bodies	ea. IFSS
		Emergencies in the period under review	Number of emergencies in the period under review	ea. IFSS
		Accidents in the period under review	Number of accidents in the period under review	ea. IFSS

KPI Group	Indicator	Description	Msmnt Unit	Responsible for Monitoring
	IS requirements' breaches detected by IC commissions of the Company Branches and Company Standing EHS Commission	Number of IS requirements' breaches detected by IC commissions of the Company Branches and Company Standing EHS Commission	ea.	IFSS
IS	Fulfillment of emergency and fire response drills' schedules in Branches	% of drills completed vs. scheduled ones	%	SD
Civil Defense and Emergency Situations	Fulfillment of civil defense, emergency prevention and response drills' schedules	% of drills completed vs. scheduled ones	%	SD
	Fulfillment of civil defense, emergency prevention and response drills' schedules	% of drills completed vs. scheduled ones	%	SD
QMS KPIs				
Process Indicators Gas transportation	Commodity transport work (CTW): – totally through Gas Transportation System (GTS) of the Company; – through NEGP (North-European gas pipeline)	Indicator that instantiates the gas pipeline(s) output and represents conventional work done to move a unit of the transported gas volume per unit of gas pipeline(s) section length	bln. m ³ *km	PDS
	Execution of CTW Plan	Ratio of actual CTW to planned one	%	PDS
	Specific gas flow rate for (own process needs) OPN (OPN _{sp})	Energy Performance Indicator that instantiates GPU, CD, CS, GTS natural gas flow rate per unit of the	m ³ /mln. m ³ *km	PDD Technical Development

KPI Group	Indicator	Description	Msmnt Unit	Responsible for Monitoring
		useful work done. Ratio of actual gas flow rate for OPN (OPNact) to the amount of actual CTW (CTWact)		Division
	Water dew point (DP _w)	Natural gas water dew point: the lowest temperature at which under a certain pressure water vapour does not condense from natural gas	°C	PDS
	Volume of transported gas: – totally through GTS of the Company; – for export; – through NEGP; – distributed via GDS to RF users	Volume of natural gas delivered to users through GTS	bln. m ³	PDS
Indicators of activity on MG Pipe Line linear section and GPU repair	Implementation of MGPL Overhaul Plan (OP)	Ratio of MGPL repaired sections' actual length to MGPL length as per OP	%	SORR & SOF CROD (Capital Repair Operations Department of Fixed Assets Repair, Construction and Reconstruction Service)

KPI Group	Indicator	Description	Msmnt Unit	Responsible for Monitoring
	Execution of GPU MS (maintenance schedule)	Ratio of actual quantity of repaired GPUs to the planned quantity	%	CSMPD of MCSO (Compressor Stations Management Production Division of Compressor Stations Operation Department)
Indicators of Energy Saving Program fulfillment	Energy Resources (ER) Saving	Data on ER saving as a result of the main and support actions on: <ul style="list-style-type: none"> – natural gas; – electric power; – ER on the whole. 	mln. m ³ ; mln.kW*hr; toe	PDD Technical Development Division
Process Indicators IMS Internal Audit	Fulfillment of IMS Internal Audits Program in AMD	Ratio of the performed audits number to that of the planned ones	%	PDD QD
	Fulfillment of IMS Internal Audits Program in Branches	Ratio of the performed audits number to that of the planned ones	%	PDD QD
	Fulfillment of corrections, CA in AMD	Ratio of completed within the prescribed time limits corrections, CA to the planned ones	%	PDD QD
	Fulfillment of corrections, CA in Branches	Ratio of completed within the prescribed time limits corrections, CA to the planned ones	%	PDD QD

KPI Group	Indicator	Description	Msmnt Unit	Responsible for Monitoring
<p>_____</p> <p>¹ All wastes according to the Russian Federation Law are hazardous</p> <p>_____</p>				
		<p>² Important Environmental Issue has an environmental impact or can have a major environmental impact</p>		

4 The results of EMS KPI monitoring

The EMS KPI monitoring results for year 2016 are provided in Table 24.2.

Table 24.2.

Results of EMS KPI (CS “Portovaya”, CS “Elizavetinskaya”, CS “Volkhovskaya”)

№	Indicator Description	Meas urem ent Unit	1st half of year 2016				2 half of year 2016				Total in 2016
			CS “Elizavetin skaya”	CS “Portovaya ”	CS “Volkhovs kaya”	CS “Elizaveti nskaya”	CS “Portovaya”	CS “Volkho vskaya”			
1. Environmental Performance											
1.1	Emissions of pollutants into the atmospheric air, total	t	864,559	3122,886	3599,64	1252,155	6568,262	2239,19	17646,692		
	including:										
1.1.1	within MPE limits	-"	864,559	3122,886	3599,64	1252,155	6568,262	2239,19	17646,692		
1.1.2	in excess of MPE (within TAE limits)	-"	0	0	0	0	0	0	0		
1.2	Methane emissions, total	-"	576,338	1253,996	3063,91	806,503	3644,625	1940,495	11285,867		
	including:										
1.2.1	within MPE limits	-"	576,338	1253,996	3063,91	806,503	3644,625	1940,495	11285,867		

1.2.2	in excess of MPE (within TAE limits)	-"	0	0	0	0	0	0	0	0	0
1.3	Carbon oxides emission	-"	113,072	1505,653	472,414	150,210	2535,06	176,492	4952,901		
1.4	NOx emissions (expressed as NO2)	-"	207,130	263,506	61,128	350,469	558,998	121,882	1563,113		
1.5	Water discharge into surface water sources, total	thous. m ³	6,588	580,843	68,017	11,507	582,897	69,433	1319,285		
	including:										
1.5.1	effluent treated to standard quality	-"	6,588	580,843	68,017	11,507	582,897	96,433	1346,285		
1.6	Weight of pollutants discharged into water sources	t	2,521	75,871	21,397	4,463	98,176	32,664	235,092		
1.7	Weight of the wastes circulating, total	-"	11,410	43,33	55,373	25,354	30,977	57,722	224,166		
	including:										
1.7.1	Waste weight as at the beginning of year	-"	0	0,003	0	0	0	0	0,003		
1.7.2	Weight of generated waste in the accounting period, total:	-"	11,410	43,327	55,373	25,354	30,977	57,722	224,163		
	including:										
1.7.2	within limits	-"	11,410	43,403	55,373	25,354	30,474	57,722	223,736		

1.1																						
1.7.2	in excess of fixed limits	-"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.8	Weight of waste sent for dumping, total	-"	7,689	21,4	22,888	14,976	16,054	39,912	122,919													
	including:																					
1.8.1	Handed over to outside organizations for dumping	-"	7,689	21,4	22,888	14,976	16,054	39,912	122,919													
1.9	Waste fraction sent for dumping	%	67,38	49,3	44,95	59,07	52,68	69,14	57,086%													
1.10	Number of accidents	ea	0	0	0	0	0	0	0													
1.11	Wastage of natural gas at accident	thous. m ³	0	0	0	0	0	0	0													
1.12	Environmental damage at accident	t тыс. руб.	0	0	0	0	0	0	0													
2 Ecological and economical indicators																						
2.1	Payment for contaminating emissions into atmospheric air, total	thous. rubles	145,060	418,824	352,86	-	179,081	184,58	1280,405													
	including:																					
2.1.1	payment for allowable emissions	-"	145,060	418,824	352,86	-	179,081	184,58	1280,405													

2.1. 2	Payment for emission above the allowable level	-"	0	0	0	0	0	0	0	0	0
2.2	Payment for discharge of contaminating substances into water bodies, total	-"	2,669	2,828	7,76	-	-0,532	-7,140	6,209		
	including:										
2.2. 1	payment for allowable discharge	-"	2,669	2,828	7,76	-	-0,532	-7,140	6,209		
2.2. 2	payment for discharge above the allowable level	-"	0	0	0	0,516	0	0	0,516		
2.3	Payment for waste disposal, total	-"	11,162	15,175	30,56	-	0,732	7,45	65,079		
	including:										
2.3. 1	payment for allowable waste disposal	-"	11,162	15,175	30,56	-	0,732	7,45	65,079		
2.3. 2	payment for waste disposal above the allowable level	-"	0	0	0	0	0	0	0		

5 The results of monitoring of occupational health and industrial safety KPI

The results of OH&IS KPI monitoring are included into the consolidated report:

- on certification of work places by working conditions;
- on injuries rate;
- on training;
- on monitoring of compliance with occupational safety requirements;
- on fire safety trainings and emergency drills, as well as CD trainings and trainings on ES prevention.

Monitoring of OH&IS KPI in the Branch is performed by the group of occupational health and safety specialists (Hereinafter - GOHS), and the results are composed in the corresponding reports.

OH&IS Reports for CS "Portovaya", CS "Volkhovskaya" and CS "Elizavetinskaya" in 2016 are provided in tables 24.3 – 24.10.

The OH KPI monitoring data are composed by the Branch GOHSs and submitted to the Company HSD monthly.

The IS reports (monitoring at HIF) are composed by the Branch GOHSs every three months and submitted to the Company IFSS.

The Company IFSS and SD specialists annually provide to QD PDD the KPI data for implementation of schedule of emergency response and fire drills, schedules of Civil Defense, accident prevention and elimination training exercises.

Table 24.3.

Report on Industrial control monitoring for compliance with IS requirements for the period of 12 months in year 2016 in the Branch of LLC “Gazprom transgaz Saint-Petersburg” – Portovoe LPMMP

No	Main indicators	For the territorial body as a whole	Including operational works				
			pipeline transport	industry production	hoisting structures	Gas supply facilities	dangerous goods
1	Number of operated hazardous industrial facilities, including:	5	3	0	0	2	0
1.1	insured pursuant to Art. 15 of the Federal Law “On Industrial Safety of Hazardous industrial facilities ”	5	3	0	0	2	0
2	Number of units of operated equipment which is subject to mandatory certification against the industrial safety requirements						
2.1	including:						
3	Number of performed inspections and control tests of equipment	64	46		22	1	0
4	Number of the employees of the operating organizations that received training and performance assessment in the field of industrial safety in the reporting year	27	27	0	16	0	0
5	Number of non-compliances with the industrial safety requirements revealed by Rostekhnadzor agencies.	2	2	0	0	0	0
5.1	number of corrected non-compliances	2	2	0	0	0	0
6	Number of employees involved in operation of hazardous industrial facilities	248	216	0	8	24	0
7	Number of employees performing functions of industrial control	15	15	0	15	15	0

8	Number of accidents in the reporting period	0	0	0	0	0	0
9	Number of incidents in the reporting period	0	0	0	0	0	0
10	Number of control-preventive inspections made by industrial control services	20	16	0	2	0	0
11	Number of violations of the industrial safety requirements revealed by industrial control services	374	374	0	0	0	0
12	Number of proposals made by industrial control services to the administration of the enterprise (organization) for ensuring industrial safety	63	63	0	0	0	0
13	Number of suspensions of the works in hazardous conditions (by the results of industrial control)	0	0	0	0	0	0
14	Number of employees brought to responsibility for violation of the industrial safety requirements (identified by industrial control services)	13	13	0	0	0	0

Table 24.4.

Report on Industrial control monitoring for compliance with IS requirements for the period of 12 months in year 2016 in the Branch of LLC “Gazprom transgaz Saint-Petersburg” – Severnoye LPMMP

No	Main indicators	For the territorial body as a whole	Including operational works				
			Major pipeline transport	industry production	lifting structures	Gas supply facilities	of dangerous goods
1	Number of operated hazardous industrial facilities, including:	5	3	-	-	2	-

1.1	insured pursuant to Art. 15 of the Federal Law “On Industrial Safety of Hazardous industrial facilities ”	5	3	-	-	2	-
2	Number of units of operated equipment which is subject to mandatory certification against the industrial safety requirements	-	-	-	-	-	-
2.1	including:						
3	Number of performed inspections and control tests of equipment	73	63	0	10	0	0
4	Number of the employees of the operating organizations that received training and performance assessment in the field of industrial safety in the reporting year	69	69		7	9	
5	Number of non-compliances with the industrial safety requirements revealed by Rostekhnadzor agencies.	-	15	-	-	-	-
5.1	number of corrected non-compliances	-	15	-	-	-	-
6	Number of employees involved in operation of hazardous industrial facilities	290	274	-	4	15	-
7	Number of employees performing functions of industrial control	16	12	-	4	4	-
8	Number of accidents in the reporting period	-	-	-	-	-	-
9	Number of incidents in the reporting period	-	-	-	-	-	-
10	Number of control-preventive inspections made by industrial control services	12	11	-	-	1	-
11	Number of violations of the industrial safety requirements revealed by industrial control services	150	135	-	-	15	-

12	Number of proposals made by industrial control services to the administration of the enterprise (organization) for ensuring industrial safety	-	-	-	-	-	-
13	Number of suspensions of the works in hazardous conditions (by the results of industrial control)	-	-	-	-	-	-
14	Number of employees brought to responsibility for violation of the industrial safety requirements (identified by industrial control services)	-	-	-	-	-	-

Table 24.5

Report on Industrial control monitoring for compliance with IS requirements in year 2016 in the Branch of LLC “Gazprom transgaz Saint-Petersburg” – Volkhovskoye LPMML

№	Main indicators	For the territorial body as a whole	Including operational works				
			Major pipeline transport	Chemical industry production	Hoisting structures	Gas supply facilities	Transportation of dangerous goods
1	Number of operated hazardous industrial facilities, including:	6	3	-	-	2	1
1.1	insured pursuant to Art. 15 of the Federal Law “On Industrial Safety of Hazardous industrial facilities ”	6	3	-	-	2	1
2	Number of units of operated equipment which is subject to mandatory certification against the requirements of industrial safety, including:	-	-	-	-	-	-
2.1	Number of units of operated equipment						

	certified against the industrial safety requirements						
3	Number of performed inspections and control tests of equipment	10	5	-	5	-	-
4	Number of the employees of the operating organizations that received training and performance assessment in the field of industrial safety in the reporting year	14	13	-	1	-	-
5	Number of non-compliances with the industrial safety requirements revealed by Rostekhnadzor agencies.	8	8	-	-	-	-
5.1	number of corrected non-compliances	0	0	-	-	-	-
6	Number of employees involved in operation of hazardous industrial facilities	203	155	-	7	36	5
7	Number of employees performing functions of industrial control	14	10	-	1	2	1
8	Number of accidents in the reporting period	0	0	0	0	0	0
9	Number of incidents in the reporting period	0	0	0	0	0	0
10	Number of control-preventive inspections made by industrial control services	15	13	-	1	1	0
11	Number of violations of the industrial safety requirements revealed by industrial control services	480	434	-	8	38	0
12	Number of proposals made by industrial control services to the administration of the enterprise (organization) for ensuring industrial safety	15	15	-	-	-	-
13	Number of suspensions of the works in hazardous conditions (by the results of	-	-	-	-	-	-

	industrial control)						
14	Number of employees brought to responsibility for violation of the industrial safety requirements (identified by industrial control services)	2	2	-	-	-	-

Table 24.6.

Results of monitoring of the indicators of special labour conditions assessment (LCA) at workplaces in year 2016

Number of WP which are subject to special labour conditions assessment in the reporting year	Total WP (net of newly introduced in the reporting year)	Including those where special labour conditions assessment was performed	Number of measures for improvement of labour conditions planned for implementation in the reporting year	Number of measures for improvement of labour conditions implemented in the reporting year	Number of WP where declaration of conformity of the labour conditions to the state regulatory requirements were executed
CS "Portovaya"					
15	62	28	1	1	0
Target value – 100% performance of the WP LCA plan					
Final indicators:	<u>CS "Portovaya"</u> LCA of 15 WP was carried out Share of performed measures relative to the planned ones: 100% Share of the WP where the LCA results are effective in 2016: 100 %				
CS "Severnaya"					
100 %	100%	100%	100%	100%	100%
Final indicators:	<u>CS "Severnaya"</u> Share of performed measures relative to the planned ones: 100% Share of the WP where the LCA results are effective in 2016: 100 %				

CS "Volkhovskaya"					
100 %	100%	100%	100%	100%	100%
Final indicators:	<u>CS "Volkhovskaya"</u> Share of performed measures relative to the planned ones: 100% Share of the WP where the LCA results are effective in 2016: 100 %				

Table 24.7.

Results of monitoring of injury rate in year 2016

Number of accidents that need not to be recorded and formalized by the act as per form N-1 or were declared as not related to production, as a result of investigation	Main causes of accidents (from column 1)	Number of accidents that are formalized by the act as per form N-1	Number of days away from work as a result of accident (from column 3)	Number of road traffic accidents		
				With injured persons	Without injured persons	Due to the fault of Branch workers
CS "Portovaya"						
0	0	0	0	0	0	0
Target value – absence of accidents (KPI = 0)						
Summary indicator :		CS "Portovaya" Number of accidents in year 2016= 0				
CS "Elizavetinskaya"						
0	0	0	0	0	0	0
Target value – absence of accidents (KPI = 0)						
Summary indicator :		CS «Elizavetinskaya» Number of accidents in year 2016= 0				

CS "Volkhovskaya"						
0	0	0	0	0	0	0
Target value – absence of accidents (KPI = 0)						
Summary indicator :		CS "Volkhovskaya " Number of accidents in year 2016= 0				

Table 24.8.

Results of monitoring of the indicators on OH and IP training in year 2016

Number of managers and specialists that passed IS evaluation training	Number of managers and specialists trained on occupational health and safety (OHS)	Number of workers trained (retrained) in the institutions providing professional training programs, additional professional education	Number of workers passed the assessment of knowledge of OHS requirements	Number of managers and specialists certified on OH and IS by the certification committee of the Branch
CS "Portovaya"				
10	10	0	329	10
Target value of KPI – completion of training events - 100%				
Summary indicator:		CS "Portovaya" All training and certification events completed - 100 %		
CS «Elizavetinskaya»				
100 %	100 %	100 %	100 %	100 %
Summary indicator:		CS «Elizavetinskaya» All training and certification events completed - 100 %		
КС «Волховская»				
100 %	100 %	100 %	100 %	100 %

Number of managers and specialists that passed IS evaluation training	Number of managers and specialists trained on occupational health and safety (OHS)	Number of workers trained (retrained) in the institutions providing professional training programs, additional professional education	Number of workers passed the assessment of knowledge of OHS requirements	Number of managers and specialists certified on OH and IS by the certification committee of the Branch
Summary indicator:		CS "Volkhovskaya" All training and certification events completed - 100 %		

Table 24.9.

OHS requirements compliance control in year 2016

Number of OHS compliance orders	Number of comments issued (from column 1)	Number of comments corrected	Number of workers brought to disciplinary liability
CS "Portovaya"			
0	0	0	1
Target value of KPI – absence of OHS compliance orders (KPI=0)/ ratio of corrected comments (100%)			
Summary indicator:		CS "Portovaya" Number of OHS violations in 2016= 0 (no OHS violations)	
CS "Severnaya"			
0	0	0	0
Summary indicator:		CS "Severnaya" Number of OHS violations in 2016= 0 (no OHS violations)	
Number of OHS compliance orders	Number of comments issued (from column 1)	Number of comments corrected	Number of workers brought to disciplinary liability

CS "Volkhovskaya"			
0	0	0	0
Summary indicator:	CS "Volkhovskaya" Number of OHS violations in 2016= 0 (no OHS violations)		

Table 24.10.

Report form on emergency response and fire drills and Civil Defense (CD), accident prevention and elimination training exercises in year 2016

№	Indicator description	Measurement units	Indicator value for Portovoe LPMMP, Severnoe LPMMP, Volkhovskoe LPMMP						Preceding period (2015)
			1 quarter	2 quarter	3 quarter	4 quarter	Reporting period	8	
1	2	3	4	5	6	7	8	9	
1	Fulfilment of schedules of emergency response and fire drills in the branches, total	%	100%	104,5%	100%	100%	101%	101,2%	
	Number of (planned/actual/together with territorial subdivisions of fire-fighting services)	ea	20/20/0	22/23/1	22/22/0	24/24/0	88/89/1	80/84/2	
	Including NEGP (North-European gas pipeline) facilities	%	100%	103,3%	100%	100%	100,9%	103,8	
2	Number of (planned/actual/together with territorial subdivisions of fire-fighting services)	ea	22/22/0	30/31/1	25/25/0	34/34/0	111/112/1	104/108/3	
	Fulfilment of schedules of CD, accident prevention and elimination training exercises, total	%	100%	100%	100%	100%	100%	100%	

Number of (planned/actual/together with territorial subdivisions of Ministry of Emergency Situations (MES))	ea	1/1/0	2/2/0	2/2/0	2/2/0	7/7/0	8/8/0
	%	100%	100%	100%	100%	100%	100
Including NEGP (North-European gas pipeline) facilities							
	ea	1/1/0	3/3/0	3/3/1	2/2/0	9/9/1	8/8/0
Number of (planned/actual/together with territorial subdivisions of Ministry of Emergency Situations (EMERCOM))							

6 The results of QMS KPI monitoring

Monitoring of QMS KPI includes the results of monitoring:

- Gas transportation process;
- Energy saving program implementation;
- IMS internal audit process implementation.

The report on monitoring of IMS internal audit process implementation indicators in year 2016 is shown in Table 24.11.

The report on implementation of "Gas transportation" process comprises the information:

- on "Water dew point temperature";
- on "Performance of the commodity transport operations plan" and the "Specific flow of gas for own process needs";
- on "Transportation gas volume".

The report on implementation of energy efficiency retrofit comprises the following data:

- branch;
- natural gas, thous. m³ (plan for the year, actual);
- electric energy consumption, thous. kW*hr (plan for the year, actual);
- natural gas, here (plan for the year, actual);
- electric energy consumption, here (plan for the year, actual).

Based on the results of the KPI monitoring, the data obtained are analyzed. After KPI analysis a conclusion is drawn on the efficiency of IMS activities and an indicator is calculated – ΔKPI_{ims} – the share of KPI indicating efficient IMS activities.

Table 21.11.

The results of monitoring of the "IMS internal audit" process indicators

№	Indicator	Reporting period, year 2016.				Preceding period, year 2015
		I quarter	II quarter	III quarter	IV quarter	
Portovoe LPMMP L						
1	Fulfillment of a program of IMS internal audits in Portovoe LPMMP L, where	100%	100%	100%	100%	100%
	Number of IMS audits carried out	7	8	3	3	21
	Number of IMS audits according to Program	7	8	3	3	21
2	Implementation of corrections, corrective and preventive actions (CA and PA) in the branch, where	100%	100%	100%	100%	100%
	Number of registered nonconformities/notifications	1/5	1/3	0/2	-	2/10
	Number of corrections, CA and PA completed within established terms	5c	1c	-	-	6c
	Number of planned corrections, CA and PA	5c	1c	-	-	14c
Severnoe LPMMP L						

№	Indicator	Reporting period, year 2016.					Preceding period, year 2015
		100%	100%	100%	100%	100%	
1	Fulfilment of a program of IMS internal audits in Severnoe LPMMPL, where	100%	100%	100%	100%	100%	100%
	Number of IMS audits carried out	5	6	6	7	24	24
	Number of IMS audits according to program	5	6	6	7	24	24
2	Implementation of corrections, corrective and preventive actions (CA and PA) in the branch, where	100%	100%	100%	100%	100%	100%
	Number of registered nonconformities/notifications	1/0	7/0	1/0	1/0	10/0	11/0
	Number of corrections, CA and PA completed within established terms	1c	7c/3ca	1c/1ca	1c/1ca	10c/5ca	11c/11ca
	Number of planned corrections, CA and PA	1c	7c/3ca	1c/1ca	1c/1ca	10c/5ca	11c/11ca
Volkhovskoe LPMMPL							
1	Fulfilment of a program of IMS internal audits in Volkhovskoe LPMMPL, where	100%	100%	100%	100%	100%	100%
	Number of IMS audits carried out	6	8	7	5	26	28
	Number of IMS audits according to program	6	8	7	5	26	28
2	Implementation of corrections, corrective and preventive actions (CA and PA) in the branch, where	100%	100%	100%	100%	100%	100%

№	Indicator	Reporting period, year 2016.					Preceding period, year 2015
		0/0	0/3	4/2	0/2	4/7	
	Number of registered nonconformities/notifications	0/0	0/3	4/2	0/2	4/7	0/4
	Number of corrections, corrective and preventive actions (CA and PA) completed within established terms	–	–	4c/4ca	–	4c/4ca	3c
	Number of planned corrections, CA and PA	–	–	4c/4ca	–	4c/4ca	3c

7 Project Social Management System KPIs

The following social KPIs are monitored, as given in Table 24.12.

Table 24.12.

List of social KPIs

KPI Description	Indicator Value for CS "Portovaya" in year 2016
Number of consultations by each type of parties concerned: total, ea. Including:	832
- cooperation with the Government of Leningrad Region: Submission of data on waste to the Committee on Housing, Utilities and Transport Management of Leningrad Region – 3 rd and 4 th quarters. Submission of information on the results of waste and environmental waters quality control to the Territorial Subdivision of Rospotrebnadzor Directorate (Federal Service on Consumer Rights Protection and Human Well-being Surveillance) for Leningrad Region in Vyborg District – quarterly.	8
- cooperation with municipalities;	0
- cooperation with regulatory authorities: Receipt of expert and sanitary and epidemiological reports on MPE darft for NEGP-1, NEGP-2 RoW in Rospotrebnadzor (2 reports); Receipt of emission specific regulations and permit for NEGP RoW in Rosprirodnadzor (Federal Service for Supervision of Natural Resource Usage) (2 documents); Submission of calculation of charges for negative impact on the environment – quarterly; Submission of Accounts (statistical reports) to Vyborg District State Statistics Department – annually; Submission of statistical reports №2-TP (water management) – annually and information on water use – quarterly to Neva-Ladoga Basin Water Directorate Submission of statistical reports №2-TP (wastes) and Waste Management Technical Report - annually.	10
- cooperation with Public Company Gazprom;	1
- cooperation with land users;	4
- cooperation with Mass Media: 1 press-release	1
- meetings with local community: Clean-up event in Bolshoy Bor settlement;	4

KPI Description	Indicator Value for CS "Portovaya" in year 2016
- cooperation with Contractors: inductions	763
- cooperation with employees: inductions -34 , Environmental trainings - 17	37
- cooperation with NGOs;	0
- cooperation with Nord Stream Project.	4
Number of women/men who participated in consultations (out of Portovoye Branch employees, indicative)	2/5 5/3
Number of complaints received, by type and source	2 0
% of complaints resolved within agreed deadlines	100
Number of social events held	6

Following the results of 2016 and up to date no complaints in regard to the Project activity have been registered from any party concerned.

All the planned events on cooperation with the parties concerned have been completed, therefore KPI value is 100 %.