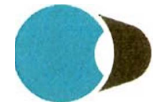




Каспийский Трубопроводный Консорциум
Caspian Pipeline Consortium
Каспий Құбыр Консорциумы



APPROVED
General Director

N.N. Gorban

INSTRUCTION No. 108
SAFE GAS-HAZARDOUS WORK
AT CPC SITES

Revision No. 3

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1. PURPOSE

This Instruction establishes requirements for safe gas-hazardous work arrangement and procedure at CPC hazardous industrial facilities.

2. SCOPE

The Instruction shall apply to performance of gas-hazardous work at hazardous industrial facilities as well as within their exclusion zones performed by CPC and contractor staff if a services agreement is in place between legal entities in accordance with the legislation of the Russian Federation and the Republic of Kazakhstan.

3. REGULATORY REFERENCES

References to the following regulatory documents are used in this document:

Table 1. List of Regulatory Documents

#	Regulatory Documents
1	Statutory
1.1	Federal Norms and Rules in the Sphere of Industrial Safety Rules of Safe Performance of Gas-Hazardous Works, Hot Works and Repair Works approved by RTN Resolution No. 485 dated 25.11.2017
1.2	Federal Norms and Rules in the Sphere of Industrial Safety Safety Rules for Hazardous Industrial Facilities of Trunk Pipelines approved by Resolution of the Federal Service for the Supervision of Environment, Technology and Nuclear Management No. 520 dated 06.11.2013.
1.3	GOST 12.0.003-2015 Occupational Safety Standards System. Dangerous and Harmful Production Factors. Classification
1.4	Rules of Industrial Safety for Hazardous Industrial Facilities of Oil and Gas Industry, Resolution No. 355 of the Minister of Investments and Development of the Republic of Kazakhstan dated December 30, 2014
1.5	Rules of Industrial Safety for Operation of Trunk Pipelines approved by Resolution No. 354 of the Minister of Investments and Development of the Republic of Kazakhstan dated December 30, 2014
1.6	Decree of the Government of the Republic of Kazakhstan # 1077 On Approval of Fire Safety Regulations dated October 9, 2014
1.7	SNiP RK 1.03-05-2001 Occupational Health and Safety in Construction Industry
2	Internal
2.1	A02-OD-HSE-052, Permit-to-Work Procedure for Arrangements of Hot Works, Gas-Hazardous, Excavation, Repair and Other Hazardous Works
2.2	Instruction No. 104 Arrangement of Air Monitoring at CPC Facilities
2.3	Instruction No. 106 Safe Repair Work at CPC Sites
2.4	CPC VRD 09.09.2014, Rules of Technical Operation of CPC Oil Transportation System
2.5	VRD 34.09.2014, Regulation on Work Arrangement within the Pipeline Exclusion Zone

4. TERMS, DEFINITIONS AND ABBREVIATIONS

The terms and abbreviations used in this document are given in Table 2.

Table 2. Terms and abbreviations

#	Term / Abbreviation	Definition
1	Terms	
1.1	Permit-to-Work	work assignment that is executed on a special template and defines work contents, work location, work commencement and completion time, safety conditions, team membership and persons in charge of safe work performance, etc. Permit-to-Work shall comprise supporting information that all the risks have been identified and all controls are in place to ensure safe work performance.
1.2	Gas-Hazardous Work	work activities connected with internal inspection, cleaning, repair and depressurization of process equipment and service lines, installation and removal of blinds on the equipment and pipelines, as well as work inside vessels (apparatuses, drying cylinders, process and drying ovens, reactors, tanks, cisterns as well as headers, tunnels, wells, pits, trenches (up to 1m in depth, for RK 1.5m in depth) and other similar places), during which explosive and fire- hazardous vapors, gases and other substances that can cause explosion, fire or affect human health may be emitted into the work zone, and also work activities in the conditions of low oxygen content (volume fraction less than 20%) in the work zone.
1.3	Work in Confined/Restricted Space	work activities inside vessels (apparatuses, tanks, cisterns as well as headers, tunnels, wells, pits, trenches (up to 1m in depth, for RK 1.5m in depth) and other similar places), during which explosive and fire-hazardous vapors, gases and other substances that can cause explosion, fire or affect human health may be emitted into the work zone, and (or) work activities in the conditions of low oxygen content (volume fraction less than 20%) in the work zone as well as places where access and evacuation are impaired.
1.4	Customer	CPC, its regional subdivisions or its authorized representative depending on the context.
1.5	Contractor	an entity having a contract/services agreement with CPC or its authorized representative, depending on the context.
1.6	Procedure	A02-OD-HSE-052, Permit-to-Work Procedure for Arrangements of Hot Works, Gas-Hazardous, Excavation, Repair and Other Hazardous Works
2	Abbreviations	
2.1	RF	Russian Federation
2.2	RK	Republic of Kazakhstan
2.3	CPC	Caspian Pipeline Consortium
2.4	PS	Pump Station
2.5	MT	Marine Terminal

5. DESCRIPTION OF THE PROCESS OF GAS-HAZARDOUS WORK

5.1. Gas-hazardous work activities at CPC facilities comprise those connected with inspection, cleaning, repair and depressurization of process equipment and service lines, including those inside vessels (apparatuses, tanks, cisterns and other similar equipment, as well as in headers, tunnels, wells, areaways, trenches, pits and other similar places), during which explosive and fire-hazardous gases, noxious vapors, gases and other substances that can cause explosion, fire or affect human health may be emitted into the work zone, and also work activities in the conditions of low oxygen content (volume fraction less than 20%).

5.2. Gas-hazardous work, including work activities connected with personnel in confined space, tanks and other equipment shall be conducted only when they can not be mechanized, automated or conducted without immediate involvement of personnel. It is required to implement programs for reduction of gas-hazardous work scope and enhancement of gas-hazardous work safety in all CPC regions.

5.3. Gas-hazardous work at CPC facilities may be performed by individuals at least 18 years old, who have passed medical examination and have no contraindications to perform such work, have passed work safety, PPE and first aid training, due knowledge test and have been appropriately certified.

5.4. The lists of standard gas-hazardous works and areas performed at CPC facilities, based on which CPC Regions, MT develop and approve internal Lists are given in Exhibit No. 4 and No. 5 of the Procedure.

5.5. CPC Operations personnel, discipline specialists under whose control it is planned to arrange and oversee gas-hazardous work, shall be familiarized with the above Lists. The above Lists shall be also communicated to the Contractor.

5.6. In case of necessity to perform gas-hazardous work not included in the approved list of gas-hazardous work, they should be performed under a Gas-Hazardous Permit-to-Work, with further inclusion in the list of gas-hazardous work within 10 days according to the Procedure.

5.7. During performance of gas-hazardous work it is necessary to provide for activities to prevent the impact of the following dangerous and harmful production factors associated with the nature of work on personnel:

- gas hazardous atmosphere;
- shortage of oxygen;
- excessive level of static electricity;
- probability of spark generation during the use of tools;
- moving vehicles, lifting equipment, handled materials, moving parts of equipment and tools;
- falling objects (components of equipment) and tools;
- special temperature conditions and unsatisfactory temperature regime;
- high or low temperature of the surfaces of the equipment;
- high pressure;
- high dust concentration in the air of the work zone;
- inadequate lighting and poor visibility;
- physical and neuropsychic overwork;
- other factors.

5.8. During arrangement of works associated with potential impact of harmful and (or) dangerous production factors on personnel, the Contractor is obliged to take measures to prevent them or reduce them to an acceptable level established by the requirements of relevant regulatory and legal acts.

5.9. Depending on the hazard level gas-hazardous works shall be divided into groups:

- I – those performed with Gas-Hazardous Permit-to-Work issue;
- II – those performed without Gas-Hazardous Permit-to-Work issue, but with mandatory registration of such works before their commencement in the Registration Log for Gas-Hazardous Work Not Subject to Permit-to-Work Issue (Exhibit 3).

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5.10. For performance of gas-hazardous work of Group I a Gas-Hazardous Permit-to-Work that provides for development and subsequent implementation of a range of activities for preparation and safe performance of work shall be issued according to Exhibit No. 2 of the Permit-to-Work Procedure for Arrangements of Hot Works, Gas-Hazardous, Excavation, Repair and Other Hazardous Works.

5.11. Gas-hazardous work of Group II shall be performed without Permit-to-Work issue. The above type of gas-hazardous works shall include periodically recurrent gas-hazardous work that is an integral part of technological process, characterized by similar conditions of their performance, constant location and nature of work, a definite membership of workers. The above work shall be included in the list of gas-hazardous work to be developed and approved by CPC Regions.

5.12. During performance of the above work the safety measures set forth in Occupational Safety Instructions of CPC Operations personnel, safety measures set forth in RF, RK regulatory acts and the requirements of this Instruction shall be used.

6. SAFETY REQUIREMENTS FOR GAS-HAZARDOUS WORK PERFORMANCE

6.1. PREPARATORY WORKS FOR GAS-HAZARDOUS WORK PERFORMANCE

6.1.1. Having received the Customer's Gas-Hazardous Work Order, the Contractor shall execute permit documentation in accordance with CPC VRD 34.09.2014 Regulation on work to be performed in the pipeline safety zone.

6.1.2. The Contractor shall perform the activities and submit the documentation specified in Exhibit 2 of Instruction No. 106 On Safe Performance of Repair Work at the CPC Facilities.

6.1.3. Gas-hazardous work of Group I can be performed at CPC facilities only in the presence of a Permit-to-Work.

6.1.4. All the risks associated with performance of work shall be reviewed at the stage of development of permit documentation and actions to prevent them or minimize their impact during performance of work shall be developed.

6.1.5. The activities shall be specified in the work execution project/plan and in the Permit-to-Work.

6.1.6. The work execution project/plan shall define the technologies of work, specific work sites, mechanisms and devices used, number of workforce, PPE, work schedule, resources and safety measures.

6.1.7. Roles and responsibilities of those responsible for organization and conducting hazardous work at CPC facilities are given in section 10 of the Permit-to-Work Procedure for Arrangements of Hot Works, Gas-Hazardous, Excavation, Repair and Other Hazardous Works.

6.1.8. Gas-Hazardous Permit-to-Work at CPC facilities shall be executed according to Exhibit No. 2 of the Procedure.

6.1.9. A stepwise diagram for the issue of Permit-to-Work is specified in Exhibit No. 1 of the Procedure.

6.1.10. Prior to work start Permit-to-Work for performance of separate types of work shall be executed according to Exhibit 14 of the Procedure, depending on the scope of work.

6.1.11. Gas-Hazardous Permit-to-Work shall be recorded in the Gas-Hazardous Work Registration Log with assignment of a number according to Exhibit 10 of the Procedure.

6.1.12. During planning of gas-hazardous as part of repair works a Permit-to-Work for performance of repair work shall be executed for the whole duration.

6.1.13. CPC site preparation for gas-hazardous work in terms of process disconnections shall be carried out by CPC Operations personnel.

6.1.14. To prepare the facility (equipment, utilities, etc.) for gas-hazardous work, it is required to perform the whole program of work preparation provided for by the respective Instructions, WEP and Permit-to-Work. This should be accompanied by appropriate safety measures to minimize the hazards of

gas-hazardous work through dropping pressure, removal of harmful and explosive products, prevention of their ingress from the adjacent process systems and exclusion of potential spark-generation sources.

6.1.15. Devices, machines, tanks, pipelines and other equipment subject to inspection, cleaning and repair, where gas-hazardous work is to be performed, shall be shut down, cleared from explosion-/fire-hazardous and toxic products, sealed from operating devices and utilities (with appropriate record in the seal installation and removal log) and prepared for gas-hazardous work.

6.1.16. This should be accompanied by observance of Instruction 102 Mechanical/Process Equipment and Piping Isolation for Safe Work Performance at CPC Facilities.

6.1.17. Startup equipment designed for devices and equipment activation shall be de-energized and measures shall be taken to prevent sudden startup of devices and equipment in accordance with Instruction 103 Electrical Equipment Lock out/ Tag out.

6.1.18. Prior to work start, the Work Team Leader shall make sure that the workers know the sequence of actions in emergency situations. Should equipment have two or more hatches (manholes), all of them shall be opened to provide for alternate escape ways.

6.1.19. Prior to work start, the Site Supervisor shall determine the hazardous zone, the boundaries of which shall be clearly marked with appropriate tags and warning safety signs, and the access of unauthorized persons to the area of gas-hazardous work performance shall be banned via installation of a barrier and arrangement of duty safety watches as required.

6.1.20. Prior to gas-hazardous work, it is required to provide two-way communication between the work site, PS (MT) Shift Supervisor and OCC Dispatcher/Contractor's Dispatcher (if any).

6.1.21. Before authorizing the team to perform preparatory activities, and in order to assess quality of preparation activities conducted, prior to gas-hazardous work, CPC Operations personnel is required to perform air monitoring to test content of harmful, explosive and explosion-/fire-hazardous substances and record results in Permit-to-Work. The requirements to air monitoring are set forth in Instruction No. 104 Arrangement of Air Monitoring at CPC Facilities.

6.1.22. Locations and frequency of air sampling to analyze content therein of toxic, combustible gases and vapors shall be determined and specified in Permit-to-Work, gas-hazardous work diagram.

6.1.23. Prior to gas-hazardous work, and also after breaks, the Work Team Leader shall check workers ability to continue working.

6.1.24. PPE, safety tools and equipment shall be checked for availability and serviceability during preparation for gas-hazardous work. Workers shall be briefed on fire safety, industrial safety measures, potential dangerous and harmful production factors at the work site and tested for PPE handling skills, knowledge of safe work practices and first aid methods and results shall be recorded in Permit-to-Work.

6.2. SAFETY REQUIREMENTS DURING GAS-HAZARDOUS WORK PERFORMANCE

6.2.1. Gas-hazardous work shall be performed only upon completion of all preparation work and activities specified in Permit-to-Work. Work scope specified by Permit-to-Work shall not be increased.

6.2.2. Permit documentation with necessary attachments shall be available at the work site.

6.1.25. The following shall be ensured for safe gas-hazardous work performance:

- sequence and mode of gas-hazardous work performance;
- air monitoring;
- measures to be taken to prevent access of persons not engaged in work performance to gas-hazardous work area.

6.2.3. During performance of gas-hazardous work where explosive substances can be emitted to the work zone it is required to use the following:

- explosion-proof portable lamps whose design corresponds to the category and group of explosive mixture;
- explosion-proof communication equipment;

- non-sparking tools;
- special anti-static clothing;
- non-sparking footwear;
- respiratory personal protective equipment (based on working conditions).

6.2.4. Devices for connecting mobile and portable electrical equipment shall be placed outside the explosion-hazardous zone.

6.2.5. Gas-hazardous work shall be performed by a team of at least two workers. The team shall consist of at least three workers, should work be performed in a confined (restricted) space, provided that only one worker shall stay in a confined space. Team members shall be provided with appropriate PPE, safety clothes, shoes, tools, accessories and auxiliary materials. Equipment inspection and air monitoring shall be carried out by one worker.

6.2.6. Both initial access and access after breaks shall be allowed by Site Supervisor, Shift Supervisor. Work shall not be started without confirmation from the above CPC representatives.

6.2.7. Work Team Leader shall also report to Site Supervisor, Shift Supervisor when the team leaves the work site.

6.2.8. Access to a gas-hazardous area shall be allowed on permission of Work Team Leader in appropriate personal protective equipment put on outside the hazardous area.

6.2.9. Work shall be started and carried out in the presence of Work Team Leader at all times.

6.2.10. Gas-hazardous work shall be performed with intrinsically safe tools, in appropriate anti-static coveralls, closed special footwear and personal protective equipment.

6.2.11. Portable lamps of voltage no higher than 12V or battery lamps manufactured in compliance with the category and group of explosive mixture shall be used for lighting. Lamps shall be switched on/off outside the explosion-/fire-hazardous areas. It is not allowed to use mobile phones and other non-explosion-proof electrical devices in the gas-hazardous area. Mobile phones and electrical devices shall be switched off and removed from the work site.

6.2.12. Respiratory PPE application and duration of its use shall comply with the standard requirements and specifications.

6.2.13. Work related to depressurization of process equipment and utilities, which are not cleared of toxic, explosive and explosion-/fire-hazardous substances or where the same can be emitted, shall be performed using hose gas masks or oxygen breathing apparatuses. It is not allowed to perform such work using filter gas masks. Duration of continuous work with a hose gas mask is determined in Permit-to-Work, but it shall not exceed 15 minutes.

6.2.14. Ambient air shall be monitored periodically during gas-hazardous work. The frequency is determined in Permit-to-Work in accordance with Instruction No. 104 Arrangement of Air Monitoring at CPC Facilities.

6.2.15. When the concentration level of hazardous substances within the work area is higher than the Maximum Allowable Concentration (M.A.C.), the works shall be suspended. Further works shall be carried out using respiratory protective equipment (respiratory PPE) and continuous air monitoring.

6.2.16. Prior to gas-hazardous work, all other types of work (construction, installation, etc.) shall be discontinued on the site and people who are not involved in the work moved to a safe distance.

6.2.17. Gas-hazardous work shall be immediately stopped in case any deviation from this Instruction, regulatory acts, non-observance of the safety measures required by Permit-to-Work and approved Work Execution Plan are detected.

6.2.18. Gas-hazardous work shall not be performed during a thunderstorm and during performance of hot works, works with spark generation potential in adjacent areas.

6.2.19. Gas-hazardous work shall be immediately stopped if petroleum (hydrocarbon) vapors, the source of which is unknown, or other hazardous conditions are suddenly detected near the work site in the course of work, and the workers shall be evacuated from the hazardous zone.

6.2.20. Works can be suspended by the workers both participating in the work process and the ones observing it by using their Stop Work Authority if in his/her opinion or judgment, such activity is deemed to be unsafe or done using an unsafe method and a risk for personnel, equipment or the environment is present.

6.2.21. Works shall be resumed after the identified non-conformities have been rectified. These observations shall be recorded.

6.2.22. Gas-hazardous work carried out on gas distribution and gas consumption networks, shall be performed according to the procedure set forth by Federal Norms and Rules in the Sphere of Industrial Safety “Safety Rules for Gas Distribution and Gas Consumption Networks” approved by Rostekhnadzor Resolution No. 542 dated November 15, 2013), subject to the requirements of this Instruction.

6.2.23. Gas-hazardous work at CPC facilities shall be banned/suspended should the circumstances or conditions that are listed in Exhibit – 1 to this Instruction occur.

6.3. SAFETY REQUIREMENTS IN EMERGENCIES

6.3.1. In case of emergency situations, circumstances that pose a risk to the safety of workers, it is necessary to stop the work immediately and act in accordance with the Emergency Response Plan for the facility where the works are performed.

6.3.2. The Work Team Leader shall immediately report the emergency situation to the Site Supervisor and Shift Supervisor.

6.3.3. In case of the occurrence of circumstances that pose a risk to the safety of workers inside a tank, vessel, header or well (signs of sickness, an attempt to take off the gas mask, rupture of the signal rope, hose failure, shutdown of an air blower), the work shall be immediately stopped and the worker shall be safely evacuated from the tank, vessel, header or well by qualified rescue personnel per Emergency Response Plan.

6.3.4. In case of an emergency or unsafe conditions both inside and outside a tank, vessel, header, well, the Work Team Leader shall immediately instruct the workers to leave the site/equipment and proceed to one of the muster points for evacuation as specified in the Evacuation Action Plan.

6.3.5. The Work Team Leader shall have no right to resume work until the emergency is rectified, and Site Supervisor’s authorization to continue work is received.

7. ADDITIONAL REQUIREMENTS TO WORK PERFORMANCE IN CONFINED SPACE.

7.1. PREPARATORY WORKS.

7.1.1. An Emergency Action Plan and a Permit-to-Work according to Exhibit 13 and Exhibit 14 of the Procedure respectively shall be executed in addition to the scope of work specified in Section 6.1 of this Instruction during arrangement of work in a confined space.

7.1.2. To perform work in confined space a team comprising at least 3 persons shall be appointed with mandatory roles and responsibilities: worker, backup person and safety watch.

7.1.3. The responsibilities of the safety watch shall include the following:

- remain immediately outside the opening to the tank, vessel, header or well (if work is in progress inside); maintain visual contact and communication with the worker at all times; communication may be by hand signals or radio;
- review the Emergency Action Plan which shall be at the work site;
- ensure the conditions when no one can remove blinds or shut off ventilators or other equipment that is necessary for the safety of workers inside the confined space;
- keep personnel not engaged in the work from entering the tank, vessel, header or well;

- ensure that SCBAs are immediately available outside the tank, vessel, header or well for rescue and be certified in their use;
- be aware of the type of work being performed and possible hazards that might be encountered;
- be alert for changing conditions and hazards that might affect the safety of workers inside the tank, vessel, header or well;
- order immediate evacuation whenever: potentially hazardous condition arises outside the tank, header or well; a worker inside the tank, vessel, header or well is displaying the effects of overexposure to toxic vapors, gases or high temperatures;
- immediately call for assistance if an emergency develops inside the tank, vessel, header or well.

7.1.4. The responsibilities of the backup person shall include the following:

- remain in the area of the tank, vessel, header or well and be immediately available for assistance upon request of the Safety Watch;
- have a separate air supply breathing equipment available (i.e. SCBA) and be ready to put it on in case of an emergency;
- monitor the air supply for the workers inside the tank, vessel (if the air supply source is located immediately outside the tank, vessel);
- assume the duties of the Safety Watch if it becomes necessary.

7.1.5. The responsibilities of worker include the following:

- attend a safety briefing conducted by Work Team Leader;
- know the chemical or toxic hazards that may be encountered during work performance, including the symptoms of exposure;
- review the Emergency Action Plan prior to entering the tank, vessel, header or well;
- wear the protective clothing and respiratory protection specified in Permit-to-Work;
- check with the Safety Watch when entering and exiting the tank, vessel, header or pit;
- alert the Safety Watch whenever they feel the effects of overexposure or when a hazardous condition develops;
- exit the tank, vessel, header or well as quickly as possible whenever the Safety Watch gives an order to evacuate immediately, the evacuation alarm is activated or a hazardous condition develops.

7.1.6. Tank, vessel, header, well to be opened, inspected, cleaned or repaired shall be cleared of hazardous substances, disconnected from the operating equipment, pipeline and utility systems by means of standard blinds as per the schematic drawing attached to Gas-Hazardous Permit-to-Work and depending on the properties of the hazardous substances they contained, washed, steamed, blown with inert gas and air.

7.1.7. As required, in order to ensure full ventilation, all hatches (manholes) of the tank shall be opened.

7.1.8. Vapors shall be removed from the upper hatches (manholes) by means of forced, or artificial ventilation.

7.1.9. The tank shall be ventilated and gas monitoring shall be performed until the concentration of oxygen, flammable or toxic gases reaches safe limits for entering the vessel.

7.1.10. Artificial ventilation shall be carried out throughout the period of worker's stay inside the vessel.

7.1.11. In order to assess the quality of preparatory activities prior to performance of works inside a tank, vessel, header, well, and in an excavation (more than 1m in depth for RF, 1.5m for RK) CPC Operations personnel shall perform air monitoring for hazardous substances (hydrocarbons, sulfur dioxide) and record results in Permit-to-Work.

7.1.12. Prior to commencing work, it is necessary to place “Gas”, “Gas-Hazardous Work” warning posters in the work area, which are to be removed upon work completion with the permission of the Work Team Leader.

7.1.13. The entry hatches of the tank shall be equipped with warning signs: “Caution! No Entry!”.

7.2. WORK PERFORMANCE.

7.2.1. It is not allowed to work inside tanks, vessels at temperature 50°C and above.

7.2.2. Hose gas masks or oxygen breathing apparatuses, or airline breathing apparatuses shall be used to protect the respiratory system of the workers inside a tank, vessel, header, well.

7.2.3. It is not allowed to use filter gas masks.

7.2.4. The person working inside a tank, vessel, header, well shall use a safety harness with a fixed lifeline.

7.2.5. The Work Team Leader shall be present at the work site during performance of works inside a tank, vessel, header or well.

7.2.6. If an increase in the number of workers is required inside a tank, vessel, header, well, then safety measures stipulating an increase in the number of Safety Watches (at least 2 Safety Watches and 1 Backup Person), procedure for workers entering and evacuation, procedure for arrangement of hoses, intake manifolds of gas masks, lifelines, availability of communication and alarm facilities at the work site, etc. shall be developed, incorporated in Gas-Hazardous Permit-to-Work and additionally implemented.

7.2.7. If there is no visual contact, a system of conventional signals shall be established between the worker and Safety Watch.

7.2.8. During performance of works inside a tank, vessel, header or well the location of the worker and Safety Watch in the course of work performance and their actions in case of an emergency associated with deterioration of the health condition of the worker or Safety Watch, shall be specified in the Gas-Hazardous Permit-to-Work.

7.2.9. Air monitoring shall be performed in accordance with Instruction No. 104 Arrangement of Air Monitoring at CPC Facilities.

7.2.10. The work inside tanks, vessels without respiratory organ protection equipment may be allowed provided that the concentration of hazardous substances (hydrocarbons) does not exceed the Maximum Allowable Concentrations (hereinafter, M.A.C.), (300 mg/m³) in the work area air, and oxygen content in the tank, vessel being not less than 20% and the probability of ingress of hazardous substances from the outside is prevented with a record in the Gas-Hazardous Permit-to-Work.

7.2.11. The following measures providing safe work performance inside a tank, vessel without personal respirator organ protection equipment shall be performed:

- continuous guaranteed fresh air supply into the tank, vessel providing normal air conditions inside the tank;
- continuous air monitoring;
- availability near the work site of alarm and communication facilities (light, sound, radio telephone);
- availability on each worker inside the tank, vessel of safety harness with fixed lifeline.

7.2.12. It is not allowed to work inside wells, headers, tunnels and other similar devices and facilities without respiratory protective equipment.

7.2.13. Duration of continuous work with a hose gas mask is determined in Permit-to-Work, however, for safe performance of has-hazardous works the duration of continuous work with a hose gas mask shall not exceed 15 minutes.

7.2.14. Portable non-sparking ladders shall be used by the worker to get into, work inside and exit the tank, header.

7.2.15. Check of serviceability, stability and reliability of ladder securing on the work site shall be performed in the presence of Work Team Leader.

7.2.16. All tools and materials required for the work shall be delivered inside the tank, vessel, header, well, excavation by a method excluding their drop and injury to the workers.

7.2.17. For duration of the work inside headers, manholes, wells, trenches and similar facilities work areas shall be safeguarded and illuminated at nighttime.

7.2.18. When applying protective coatings, sanding of surfaces, inner surfaces of tanks, vessels accompanied by emission of harmful and explosive products, it is necessary to provide for forced removal of such products.

7.2.19. Performance of the above works without respiratory protective equipment is not allowed.

7.2.20. Upon completion of the work inside the tank, vessel, Work Team Leader prior to closing the hatches shall make sure personally that no people, tools, materials and foreign objects are left inside, then close the hatches and put a relevant entry in Permit-to-Work.

8. PROCEDURE FOR THE PERFORMANCE OF GAS-HAZARDOUS WORK NOT SUBJECT TO PERMIT-TO-WORK ISSUE.

8.1. Permission to perform work without issue of Gas-Hazardous Permit-to-Work shall be valid for not more than one shift.

8.2. The person authorizing gas-hazardous work without issue of Permit-to-Work shall be appointed by a Resolution across the Region, CPC MT.

8.3. Site Supervisor shall be responsible for admission to perform gas-hazardous work without issue of Permit-to-Work at CPC facilities.

8.4. Prior to authorizing work performance, Site Supervisor, jointly with Work Team Leader, shall determine the following:

- work nature, contents, work site, scope, date and time;
- gas-hazardous work preparation activities, work safety activities;
- team of workers in accordance with their profession and qualification.

8.5. Work Team Leader shall enter the data specified in Clause 8.3 into Lines 1 – 7 of Registration Log for Gas-Hazardous Work Not Subject to Permit-to-Work Issue (hereinafter – the Log).

8.6. Before allowing to perform preparatory activities Work Team Leader shall conduct a safety briefing to workers familiarizing them with work nature and contents and the safety measures corresponding to the nature of works to be performed. The workers shall put their signature in Line 7 of the Log, thus confirming having received a safety briefing.

8.7. During preparation for work performance the Work Team Leader shall:

- ensure availability, serviceability, safe location and compliance of machinery, equipment and tools to be used;
- ensure availability of operable fire-fighting equipment at the work area;
- ensure availability and serviceability of personal and collective protective equipment, special clothes and special footwear in accordance with safety measures;
- ensure application of technical devices having Rostekhnadzor permits to use, certificates of conformity and passports;
- ensure that the number of workers, their professions and qualifications correspond to work nature and contents;
- check that workers have occupational safety, electrical safety, basics of fire safety knowledge test certificates;

8.8. Prior to commencing the work, the team members shall assess the compliance of the work area with safety requirements. The team members shall communicate the results of the assessment to Work Team Leader.

8.9. Having reviewed completeness and quality of preparatory activities, Site Supervisor shall put his/her signature in Line 5 of the Log, thus allowing the team to perform the work.

8.10. Work Team Leader shall put his/her signature in Line 6 of the Log, thus confirming that work safety activities have been completed.

8.11. During performance of work the person in charge of air monitoring shall enter the gas analysis results into Line 8 of the Log within the timeframes specified in Line 6 of the Log.

8.12. A new Permit-to-Work shall be issued if the working conditions or the team of workers are changed.

8.13. During performance of work the Work Team Leader shall:

- perform direct management of works and workers in accordance with their profession and qualification;
- control the actions of the workers;
- ensure that the technology of work performance meets the safety requirements specified in the Log;
- ensure serviceability, safe location and movement, compliance of machinery, equipment and tools to be used with the safety requirements specified in the Log;
- ensure fulfillment of the safety measures, compliance with electrical safety and explosion protection requirements specified in the Log, during performance of works, after breaks in the works and upon completion of work;
- ensure serviceability and correct use of personal and collective protective equipment, special clothes and special footwear by the workers in accordance with the measures specified in the Log.

8.14. Work Team Leader shall report to Shift Supervisor about work commencement and completion.

8.15. Upon completion of work, the workers shall clean up the work site, remove tools and materials, the workers shall be removed from the work site. An entry about the work completion time is made in Line 9 of the Log.

8.16. In case of performance of work by Operations personnel Shift Supervisor shall assume the role of Work Team Leader.

9. LIST OF EXHIBITS

List of exhibits to this procedure is given in Table 3.

Table 1. List of Exhibits

Exhibit	Title
1.	GAS-HAZARDOUS WORK ARRANGEMENT AT CPC FACILITIES
2.	APPROXIMATE LIST OF GAS-HAZARDOUS WORK BRIEFING ISSUES
3.	REGISTRATION LOG FOR GAS-HAZARDOUS WORK PERFORMED WITHOUT PERMIT-TO-WORK ISSUE.
4.	REVISION SHEET

EXHIBIT 1 GAS-HAZARDOUS WORK ARRANGEMENT AT CPC FACILITIES**Gas-Hazardous Work Arrangement at CPC Facilities**

1. Gas-hazardous work is strictly prohibited at CPC facilities due to the following causes:

- Absence of Gas-Hazardous Permit-to-Work;
- Absence of any required person specified in Permit-to-Work at the gas-hazardous work site;
- Missing or faulty PPE, tools, equipment and accessories, which provide for safety of workers;
- Workers without qualification, HSE and fire safety certificates shall be disallowed to work;
- Hazardous working conditions (leak, equipment failure, etc.);
- Maintenance, repair or other work in this area, which was not endorsed and makes work implementation unsafe;
- Absence of reliable radio (telephone) communication with OCC Dispatcher, Shift Supervisor/Contractor's Dispatcher (if any);

2. The present list is not complete and workers may be requested to comply with additional requirements that would prohibit gas-hazardous work at CPC facilities due to local conditions, work type and nature.

EXHIBIT 2 APPROXIMATE LIST OF GAS-HAZARDOUS WORK BRIEFING ISSUES**Approximate list of gas-hazardous work briefing issues**

1. Work purpose and timeline.
2. Worksite process conditions, environment inside and outside of the system, as required.
3. Harmful and hazardous factors, which may occur during work.
4. Type and boundaries of gas-polluted and hazardous areas. Personnel emergency evacuation plan.
5. First aid rules and methods.
6. Work preparation and safety precautions.
7. Work conditions; focus on PPE.
8. Procedure for gas-hazardous area entry/exit. Location of workers, backup personnel etc. Communication and alarm equipment.
9. Work sequence by individual operations: procedure for delivery (removal) of tools, materials etc. and their locations.
10. Sequence of workers engagement, work and rest mode.
11. Actions to be taken by workers when work conditions change. Procedure for notification and call-in of appropriate persons and services in emergency.
12. Work completion.

EXHIBIT 3 – REGISTRAITON LOG OF GAS-HAZARDOUS WORK NOT SUBJECT TO PERMIT-TO-WORK ISSUE.

Registration log of gas-hazardous work not subject to Permit-to-Work issue.

#	Work date and time	Work location	Work type	Gas-hazardous work preparation activities complete (name and signature of responsible person)	Work safety activities complete (name and signature of responsible person)	Work safety requirements acknowledged (names and signatures of workers)	Air monitoring results	Note
1	2	3	4	5	6	7	8	9

