



TECHNICAL CONDITIONS

for works and activities in buildings, hazardous areas, zones and close to systems and networks administered by NET4GAS, s.r.o.

This is a completed document of the "Operation of the transmission system of NET4GAS, s.r.o." guideline

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1 PURPOSE

This document details and specifies the technical and safety conditions stipulated by both general and internal legal and technical regulations applicable to works and activities performed in hazardous spaces, premises and facilities, protective and safety zones of N4G and in the vicinity of the telecommunication network owned by N4G.

The purpose of the conditions stipulated in this regulation is to enable works and activities in hazardous and protective premises or zones and/or in the vicinity of networks and lines owned or administered by N4G while achieving the maximum occupational safety and safety of all affected equipment. N4G operates gas pipelines and gas equipment.

The operation of telecommunication network of N4G is ensured by the supplier.

2 SCOPE OF APPLICATION

Technical and safety conditions pursuant to the provisions of Point 1 (hereinafter referred to only as the "TC") are binding for all employees of N4G within the scope of work assignment and job description, as well as for employees of external organizations and for natural persons performing works on the groundwork of contractual or other relationships.

In individual especially justified cases (mainly in unforeseen or for any other reason occurring non-standard situations), the head of the operating area can permit a temporary exception from these TC – such exception being subject of approval by the operations manager.

A prerequisite for permitting the exception shall be the determination and implementation of such alternative measures, which will in given situation ensure maximal level of safety for N4G employees and other persons, as well as protection of premises and facilities, including other equipment.

3 TERMINOLOGY

3.1 ABBREVIATIONS

OHS	Occupational Safety and Health.
SZ	Safety zone.
CE	Mark on an equipment proving its compliance with EU standards.
DK	Metallic long-distance telecommunication cable.
DMV (LEL, UEG)	Lower explosion limit of gas.
DOK	Long-distance fibre cable.
CS	Compressor station.
LS	Line section.

OIP (IP)	Regional Labour Inspectorate (former Occupational Safety Inspectorate).
CPDD	Coordination, Planning and Documentation Division
PPE	Personal protective equipment.
OP DK+DOK	Protective zone of long distance metallic and fibre line.
CID	Conflicts of Interest Department
OZO	Responsible employee of the customer.
OZP	Responsible employee of the transmission system operator.
OZZ	Responsible employee of the contractor.
Business Terms and Conditions of N4G	Business Terms and Conditions for ensuring occupational health and safety (OHS), environmental protection (EP) and fire protection (FP) (hereinafter referred to as the "Business Terms and Conditions") published pursuant to the provision of Section 273 of Act No. 513/1991 Coll., Commercial Code, as amended.
FP	Fire protection.
OA	Operating area.
TRS	Transfer and regulating station.
TS	Transfer station.
N4G	NET4GAS, s.r.o., Na Hřebenech II 1718/8, Prague 4 - Nusle, 140 21 (Company Identification Number: 27260364).
ZONE	Environment with explosion hazard.
SÚBP	State Occupational Safety Authority (former Czech Occupational Safety Authority).
TOPA	Technical and organizational project assurance.
TR	Technical Conditions for Works and Activities in Premises and Facilities, Hazardous Spaces, Zones, and in the Vicinity of Networks and Lines Administered by N4G
ITS	Inland transfer station.
PTN	Proprietary telecommunication network.

3.2 TERMS AND DEFINITIONS

Hazardous spaces of N4G (premises subject to these technical conditions) comprise:

- protective zones of gas equipment, including equipment or systems assuring management, securing, and transmission of information about activities of individual equipment and of the gas system as whole (Section 2 (2-b)) and Section 68 of Act No. 458/2000 Coll., as amended, (in particular Act No. 158/2009 Coll.),
- protected areas (proximity) of electrical equipment (ČSN EN 50110-1, as amended and subsequently corrected),
- premises where activities with increased and high fire hazard are carried out, including premises where such activities are carried out temporarily, for example during equipment maintenance or repairs (Section 4 of Act No. 133/1985 Coll., as amended),
- premises where welding is done (Section 5 of Regulation No. 87/2000 Coll., as amended),

Hazardous space is a limited space determined as a specific place for work on gas equipment within the safety zone pursuant to the provisions of Section 69 of Act No. 458/2000 Coll., as amended, if persons or property (objects, vegetation, forests, etc.) are located within. In this

case, it is necessary that unauthorized persons leave the hazardous space and other persons who cannot leave, as well as property owners, are notified of the works in advance and are informed in advance about possible risks, signals in the event of any threat, and with protection methods equally as in the event of other hazardous spaces of N4G.

Hazardous spaces subject to these technical conditions can comprise even other premises designated as hazardous in a contract for work, record on workplace handover, or in any other binding document.

Note: It is prohibited to use mobile telephones and radios, including the metering devices, that are not of "EX" design, in the premises classified as ZONE 0,1,2, unless any other alternative measures are set.

Safety zone (SZ)	Pursuant to the provisions of Section 69 (2) of Act No. 458/2000 Coll., as amended, the space is delimited by horizontal distance from the ground plan of the gas equipment measured perpendicularly to its perimeter. SZ are determined to prevent or mitigate effects of possible gas equipment accidents and to protect lives, health, and property of persons. Size of the safety zone for gas pipelines constructed before the effective date of amendment to the Energy Act (158/2009 Coll.) remains unchanged. Pursuant to Article II, Section 6 of the amendment, the administrative proceedings initiated before the effective date thereof will be completed pursuant to the provisions of previously valid legal regulations. Based on this provision it is possible to derive that SZ according to the amendment will be created only after the effective date of the zoning decision or on the effective date of zoning permit in administrative proceedings initiated after July 4, 2009.
Flammable gas detector	Equipment for detection and/or metering of flammable gas presence in atmosphere.
Lower explosion limit	Lower limit of gas concentration in air (indicated as volume percentage), during which the mixture of gas and air starts to explode (designated as DMV, SMV, LEL or UEG). Pursuant to the provisions of ČSN EN 61779-1 as amended and subsequently corrected.
Spark safety	Method of protecting electrical equipment for hazardous space (designated as "i") pursuant to the provisions of ČSN EN 60079-10 as amended and subsequently corrected.
Extraordinary fault	A fault which occurred during equipment operation and must be eliminated immediately in order to restore safe operation.
Environment	Characteristics of the surroundings (space or its part) determined by the surroundings as such or by objects, equipment, etc. located therein.
Non-sparking equipment	Equipment, instruments, aids, clothing and shoes prescribed for the hazardous space.
Non-explosive equipment	Electrical equipment, which can be present in the hazardous space (designated as "EX", "E EX").
N4G structure	A part of the transit system, for example pipeline closing valve, transfer and regulating station, compression station, junction point and branch-off point, etc.
Gas equipment outage	Condition of technological equipment within operating area reducing or resetting the available power.
Protective zone	Pursuant to the provisions of Section 68 (2) of Act No. 458/2000 Coll., as amended (in particular by Act No. 158/2009 Coll.), is a continuous space in direct vicinity of a gas equipment delimited by vertical planes situated in

	horizontal distance from its perimeter, and intended for securing its safe and reliable operation.
DK + DOK protective zone	Protective zone of a long distance metallic or optical telecommunication cable pursuant to the provisions of Section 102 of Act No. 127/2005 Coll., on electronic communications, as amended.
Fixed closure	Method of electrical equipment securing for use in hazardous space (designated with "d").
Authorized employee	Manager (employee of N4G) authorized in writing by head of operation area to issue (sign) order for work on live electrical equipment, or for work without non-sparking equipment in hazardous space using order V.
Workplace	All premises and places where employees are working, and which are subject to direct and/or indirect supervision by the employer.
Hazardous spaces	Premises where explosive atmosphere is or could be present to such degree that special measures relating to design, installation, and usage of equipment are required. Premises with temporary or permanent hazard of injury by electric current due to external effects.
Especially hazardous spaces	Premises with increased hazard of injury due to special circumstances, external effects, and/or combination of both.
Permanent supervision	Continuous monitoring of work activities carried by employees and condition of the workplace, when the appointed employee may not leave the employees and may not do anything else except the supervision.
Size of DK+DOK PZ	Determined pursuant to the provisions of Section 102 (2) of Act No. 127/2005 Coll., as amended, and corresponds to 1.5 meters to the side from outer lines.
Proprietary telecommunication network	Network intended for management, metering, securing, and automation of gas system operation and for transmission of information for IT and computing equipment operation pursuant to the provisions of Act No. 458/2000 Coll., as amended, Section 58, (1)(c), and Section 60 (1)(a).
Secure design	Method of electrical equipment securing for use in hazardous space (designated with "e").
Zone 0	Space where explosive atmosphere consisting of mixture of air with flammable substances in form of gas, vapour or fog is present permanently, for a long time, or frequently.
Zone 1	Space with probability of occasional occurrence of explosive atmosphere consisting of mixture of air with flammable substances in form of gas, vapour or fog.
Zone 2	Space where formation of explosive atmosphere consisting of mixture of air with flammable substances in form of gas, vapour or fog is not probable and if the explosive atmosphere is formed, it is present only exceptionally and for a short period of time (for example in the event of a fault).

4 RESPONSIBILITY AND POWERS

- a) Employees assigned to the particular action shall be responsible for compliance with the TC:
 - responsible employee of the customer (OZO) – in the event of capital projects (for example construction of new equipment),

- responsible employee of the operator (OZP) – in the event of operation related projects (for example repairs of existing equipment),
 - responsible employee of the contractor or supplier (OZZ),
- b) The responsible employee of the customer or operator and operating entity shall demonstrably ensure training of all involved personnel of the contractor (supplier) in the area of safety and fire regulations and informing them about the content of these TC.
- c) For activities with increased fire hazard, the contractor (supplier) shall secure specification and compliance with the fire safety conditions (Section 15 (6) of Regulation No. 246/2001 Coll., as amended). It is also obliged to ensure that legal regulations, technical standards, manufacturers' documentation, and other requirements are complied with during the works (in particular that the works are carried out in accordance with the approved working procedure):
- responsibility for correctness of the working procedure, where fire safety and occupational health and safety conditions must be also stipulated, shall be borne by the author of this procedure,
 - fire safety conditions applicable to the working procedure shall be determined by an operator's representative qualified in the area of fire protection (Section 11 (1) or (2) of Act No. 133/1985 Coll., on fire protection, as amended), at the time of absence of person qualified in the area of fire protection, the conditions can be defined by the manager appointed by the head of the operating area,
 - the working procedure for activities in hazardous spaces must be approved by the manager of the contractor (supplier) and by the manager of the operator (customer),
 - the persons involved must be informed about the working procedure and risks resulting from or relating to the activities on the particular equipment, workplace, or space no later than prior to the commencement with the works,
 - making the persons involved familiar with the risks of work on the particular equipment, workplace, or space and in the event of a gas equipment also about its protective and safety zone shall be the responsibility of the transmission system operator (N4G),

Similarly, in the event of works and activities in hazardous spaces and works with increased hazard, the OZO or OZP shall obtain from OZZ a written document proving the organizational measures applicable to the performed activity from the perspective of possible risks, OHS and fire protection assurance, including determination of conditions stipulated by the project, technological procedures, or working procedures.

Before work commencement, OZP shall ensure conditions for safe execution of the works (pipeline ventilation, securing of fittings and/or equipment, delimitation of the workspace, etc.).

Such prepared workplace shall be officially handed over between OZP or OZO and OZZ. From the moment of the handover, OZZ shall be responsible for compliance with all provisions of the TC and for assurance of compliance with safety and fire regulations and technical and organizational project assurance (TOPA). This does not foreclose the possibility of action checking by the transmission system operator.

In the event of any unforeseen complications, the OZZ shall request necessary assistance through OZP.

- d) Opinions and positions within the meaning of Act No. 458/2000 Coll., as amended (the Energy Act), regarding individual actions of external entities interfering with protective or safety zones of a gas pipeline or in the vicinity of the proprietary telecommunication network, shall be drawn-up on behalf of N4G by the Conflicts of Interests Department (possibly in cooperation with other specialized departments and/or operations of N4G as

required). Implementation of the conditions stipulated in CID opinion (locating the underground equipment, professional supervision, etc.) shall be ensured for the applicant by individual operating areas after handover from CID. Central registration of all opinions and positions on behalf of N4G is maintained and processed by the CID in Prague. If any work is carried out in protective or safety zone of a gas pipeline by an external entity without written opinion of the CID, the responsible employee of the particular operating area shall issue "Record on Intervention into Protective/Safety Zone of N4G", discontinue further works, and order considering of application with the CID Prague.

- e) Supporting documents for opinion presentation and positions pursuant to the provisions of Energy Act regarding individual projects considered for compression station areas shall be drawn-up by relevant operating areas on behalf of N4G; such operating area shall also verify compliance with the conditions of the opinion. Summary opinion shall be issued by N4G CID in Prague.
- f) Opinions and positions within the meaning of Act No. 127/2005 Coll., on electronic communications, as amended, regarding individual actions of external entities interfering with the protective or safety zone of PTN on behalf of N4G shall be drawn-up on behalf of N4G by the Conflicts of Interests Department (possibly in cooperation with other professional departments and/or operations of N4G as required). Implementation of the conditions stipulated in CID opinion (locating the underground equipment, professional supervision, etc.) shall be ensured for the applicant by contracted suppliers listed in opinions after handover from CID. Central registration of all opinions and positions on behalf of N4G is maintained and processed by the CID in Prague. If any work is carried out in protective or safety zone of PTN by an external entity without written opinion of the CID, the responsible employee of the particular operating area shall issue "Record on Intervention into Protective/Safety Zone of N4G", discontinue further works, and order considering of application with the CID Prague.

5 TECHNICAL CONDITIONS FOR WORKS AND ACTIVITIES

5.1 GENERAL PROVISIONS

5.1.1 Employees carrying out the works in hazardous spaces, in facilities of N4G, in protective and safety zones, or in the vicinity of PTN must comply in particular with relevant provisions of the following regulations:

- a) Act No. 458/2000 Coll., as amended, (Energy Act)
- b) Act No. 127/2005 Coll. on electronic communications, as amended,
- c) Act No. 251/2005 Coll. on labour inspection, as amended,
- d) Act No. 253/2005 Coll. which amends certain acts in connection with adoption of the act on labour inspection,
- e) Act No. 406/2004 Coll., on more detailed requirements on occupational and health safety assurance when working in environment with explosion hazard, as amended
- f) Act No. 309/2006 Coll., on further conditions relating to occupational and health safety assurance, as amended
- g) ČÚBP Regulation No. 48/1982 Coll., as amended, which defines the basic occupational health safety and technical equipment safety requirements (valid only as amended by Regulation No. 192/2005 Coll.),
- h) Government Decree No. 591/2006 Coll., as amended, on more detailed minimal requirements on occupational and health safety at construction sites,

- i) technical rules TPG 905 01, as amended, Basic requirements on gas equipment operational safety,
- j) other related legal and technical regulations,
- k) management system documents and other internal regulations, working procedures, and conditions issued by N4G.

- 5.1.2 The contractor (supplier) shall appoint his/her responsible employees who shall be in contact with OZO or OZP with the aim of identifying operative solutions for issues encountered during works execution.
- 5.1.3 For works which interfere with or might endanger operation of the N4G gas system, it is necessary to draw-up and approve a technical-organizational project assurance (TOPA) or Instructions.
- 5.1.4 Construction and/or erection works within the protective zone of the gas pipeline, in the premises and facilities of N4G and in the vicinity of N4G PTN must be negotiated with the operator (customer), who shall determine necessary conditions, issue written permit, and arrange for supervision (if specified or required with regard to the situation).
- 5.1.5 Employees performing any type of work in protective zones, facilities of N4G, hazardous spaces, and in the vicinity of N4G PTN must be demonstrably acquainted with the technical conditions and OHS risks; otherwise commencement with any construction and/or erection works is not permitted. This restriction does not apply to agricultural workers performing standard agricultural works within such protective zones (ploughing, seeding, harvesting) with the exception of reclamation subsoiling, melioration and irrigation works, establishment of orchards, hop gardens, vineyards, fencing, landscaping, etc. All such activities must be negotiated in advance with the transmission system operator and with telecommunication lines operator.
- 5.1.6 Head of the operating area shall be obliged to immediately discontinue any and all works should he/she find that the regulations and conditions applicable to such works are not complied with, or should he/she find any circumstances posing threat to health, lives, or safety of employees.
- 5.1.7 Construction and erection works within protective zones of gas pipelines of N4G in the vicinity of N4G PTN and within protective zone of telecommunication lines must be managed by responsible supplier's technician on the side of the executing organization.
- 5.1.8 It is necessary to respect the local warning signs and to use specified PPE (hard hats, etc.) in facilities of N4G. Movement around the areas is allowed over designated paths only.
- 5.1.9 Entry barriers and existing fencing may not be damaged between the times of workplace acceptance and returning. Should temporary removal of these access prevention measures become necessary, the organization requesting the removal shall ensure security guard for the agreed temporary period of time and it will agree the method of removal and securing with OZP.
- 5.1.10 Any usage of open fire in facilities of N4G without a special permit is strictly prohibited (see Section 5.9)!!!
- 5.1.11 Employees of suppliers (contractors) are prohibited to manipulate with technological equipment of the gas system unless such works are covered by issued work permit.

- 5.1.12 Movement of all vehicles must take place exclusively out of the gas pipeline axis. Should there be any need to cross an operated pipeline PTN cables, and/or telecommunication lines, it is strictly necessary to consolidate the area with road panels or with another suitable way approved by the operator. Movement of vehicles and mechanisms outside paved roads must be approved by the operator who will specify potential further conditions.
- 5.1.13 The entire workplace must be put into proper condition after works completion (cleanup, etc.).
- 5.1.14 Any and each damage to any equipment shall be immediately reported to the operator or to the customer. Damage must be recorded (written record is required), stipulating the method and party responsible for relevant measures and repairs. The record will be issued by relevant operating area.
- 5.1.15 Any damage of telecommunication lines shall be immediately reported to the relevant operating area. Damage shall be recorded in "Record on Telecommunication Cable Damage" (see Section No. 5).
- 5.1.16 It is prohibited to bring any alcoholic beverages or any other addictive substances into the premises and/or workplaces and to consume such substances during work.
- 5.1.17 Smoking outside premises stipulated by the operator is prohibited in facilities and workplaces, even in cases when open fire usage for works and activities is possible according to relevant issued permit.
- 5.1.18 OHS issues are dealt-with by N4G's internal documentation.
- 5.1.19 PPE usage in hazardous spaces, facilities, and in protective zones of N4G shall be governed by relevant internal regulations of N4G.
- a) Used PPE must be of approved type (compliance statement for relevant supplied PPE and risk), with valid usage term, with necessary protective characteristics, and in required functional condition pursuant to the provisions of Government Decree No. 495/2001 Coll., as amended.
 - b) When working and performing activities in N4G's facilities, equipment, and technological units, during works in heights and in excavations, all employees shall be obliged to use a hard hat (except welders and their assistants using welders' helmets); hearing protection shall be used in noisy environments.
 - c) For work in hazardous spaces with the classification of ZONE 2,1,0), for work or manipulation with gas equipment, when the gas leak may be possible, and for related activities (for example setting of sealing balloons into pipelines, gas concentration measurement, fire assistance, etc.), the employees must be as a minimum equipped with antistatic suit with reduced flammability or with non-flammable clothing, specified underwear, antistatic shoes, and in accordance with the guideline Occupational Health and Safety Organization Principles of N4G.
 - d) Usage of appropriate PPE by subordinate employees shall be determined and checked by relevant managers within the scope of their powers.

5.2 SPECIAL PROVISIONS

As regards other internal regulations and orders prepared in relation to state or industry regulations, the following provisions must be observed by supplier organizations:

- 5.2.1 All employees of supplier organizations (contractors) working in the premises of N4G shall be recorded and their up-to-date list must be deposited at the reception of the particular facility. When working or performing any kind of activities within the premises of N4G, all employees must be visibly designated with logo of their employer and possibly also with their name tag.
- 5.2.2 Before entering into facilities without permanent attendance, the employees of supplier organizations (contractor) shall be obliged to report to the shift operation of the control room of relevant OA of N4G.
- 5.2.3 There are Operating Logs in the facility without permanent attendance. Each visitor to such facility must record himself/herself into the log. As a minimum, it must specify the time of personnel presence, their names, and purpose of the visit.
- 5.2.4 Identified breach of OHS regulations, FP regulations, these TC, or breach of the conditions stipulated by the agreement by external employees can constitute reason for interruption or discontinuation of works or for contract termination with their employer.
- 5.2.5 A written working procedure must be prepared for all works performed by contractors (separately, as work order, or as "V" order), which shall stipulate the area of activity with specification of all limiting conditions and limitations, determine numbers and names of involved employees, determine contractor's (supplier's) professional supervision, and define time and duration of the work activity. The working procedure shall be prepared by the contractor (supplier). All working procedures are subject to approval and permitting by the head of operating area or his relevant deputy. The working procedure shall remain effective only for the duration of the event (job) for which it was approved.
- 5.2.6 Whenever there are employees of multiple contractors present at the site, the customer shall be obliged to appoint a necessary number of occupational health and safety coordinators for the site. If the obligation to appoint a coordinator is not stipulated by Act No. 309/2006 Coll., the obligation of OHS coordination is stipulated only by the Labour Act pursuant to the provisions of Section 14. Operation and health safety related measures and the procedures of their assurance pursuant to the provisions of Section 101 (3) of Labour Code shall be coordinated by employees of N4G.
- 5.2.7 It is prohibited to carry out any earthworks without prior inspection of underground lines and equipment position (cables, gas pipelines, earthing elements, etc.) on all premises of N4G. Earth works must be carried out pursuant to the provisions of Section 5.3. Delimitation of underground lines and equipment shall be ensured by OZP. Before commencing with the works, all relevant employees of the contractor (supplier) and operator must be demonstrably informed about this condition.

- 5.2.8 The operator shall appoint a place outside the facility or premises owned by N4G, where the contractor (supplier) can work with open fire within the framework of erection works without operator's permit. The contractor shall, however, respect possible restriction of works with open fire even in these locations in the event of an emergency situation caused by pipeline depressurization or gas outburst from a broken pipeline. The situation shall be communicated to the contractor (supplier) by OZO, OZP, or chief shift operating technician either orally or through announcement of relevant threat signal.
- 5.2.9 When working with chemical substances and flammable materials, OZZ shall be responsible for compliance with relevant safety rules and regulations stipulated by valid legislation. Upon completion of works with these substances, OZZ shall ensure that these substances are deposited and disposed of in accordance with applicable regulations see Business Terms and Conditions of N4G.
- 5.2.10 Any contractor, activities of which shall result in waste formation, shall be responsible for ecological disposal of such waste.
- 5.2.11 Entry of vehicles into N4G operating areas will be dealt with by the operation area manager. Vehicles can drive only over permitted routes and may not exceed permitted speed. It is important to maintain the roads clear for heavy fire fighting equipment.
- 5.2.12 Connection of new designated (subject to statutory regime) technical equipment to the equipment in operation is possible only with consent given by the Start-up Committee provided that all conditions for the connection are complied with (for example initial revision reports, "as is" documentation, local operating regulation, etc.).
- 5.2.13 Contractor's (supplier's) workplaces, which have not been transferred to the UGS operator so far, have to be provided with lockable entrances or gates, which will enable fire fighting with heavy equipment in the event of necessity.
- 5.2.14 All equipment in operation shall have to be provided with alert tables and, in the event of any manipulation with such equipment, also with tables indicating real up-to-date condition.
- 5.2.15 OZZ shall be continuously informed by the operator's representative about the situation in gas, electricity, oil, and other media distribution in transferred equipment. OZZ together with OZP shall draw-up schemes of such distribution systems, which will be operatively specified on regular basis. The schemes will be located in operator's control room or at OZP. The schemes must visibly designate all sections which are:
- a) live;
 - b) filled with gas or oil and are connected over fittings with other sections where explosive mixture formation must be expected;
 - c) safely separated and formation or occurrence of explosive mixture is considered impossible;
 - d) protective zones;
- 5.2.16 During the occupational and fire safety training, OZP shall inform the contractor's (supplier's) employees with fire emergency guidelines and with "Fire" and "Gas" signals and shall define actions to be taken in the event of such signals.

5.3 INSTRUCTIONS FOR EARTHWORKS IN THE PROTECTION ZONE IN N4G BUILDINGS IN THE VICINITY OF HIGH-PRESSURE SYSTEMS

- 5.3.1 To prevent damage to underground facilities it is absolutely necessary that before excavations start in the required field, all underground facilities placed there are marked and all the relevant employees of the operator, maintenance and contractor clearly informed of the places. Excavation may be carried out only by approved technological procedure drawn up according to the requirements of TP_G03_01_01_03 Principles for designing, constructing, renovating and repairing of up to 100-bar high-pressure pipelines and connections, which will describe the individual work operations, including the mechanisms used.
- 5.3.2 Earthworks at a distance greater than 4 m from the pipeline plan can be carried out without the direct supervision of the operator based on a written permit of the gas facilities operator.
- 5.3.3 Earthworks at a distance of less than 4 m from the pipeline plan or the pipeline facilities can be carried out based on written permit under the supervision of the pipeline operator.
- 5.3.4 Machinery may be used when working in N4G buildings and areas and on line bases of the gas line may be used up to the min. distance "a", "b" from the surface of the pipeline according to Annex No. 1. The minimum distance for the use of machinery is determined by N4G as follows:

		"a"	"b"
Pipeline pressure	under		
	non-inspectable	50 cm	30 cm
	inspectable	20 cm	20 cm
Pipeline pressure	without	5 cm	5 cm

Note: During earthwork while uncovering defects additional safety measures may be required by the operator with regard to the seriousness of the defects being uncovered, such as extending the area of the manual excavation.

During earthwork near the pipeline another person must be present who monitors the compliance with the minimum distance "a", "b" and guides the operator in handling the excavator shove.

- The axis of the pipeline "o" is marked and the approximate depth coverage "k" determined;
- The topsoil zone "A1" (200-300 mm) in the range of the future excavation is mechanically stripped.
- A bore A2 is done manually (using a spade, shovel, needle probe) to expose a section of the pipeline. The size of the bore is chosen so as to safely verify the location and direction of the underground pipeline. When completing the bore, a verified layer of soil in zone "C" may be excavated manually.
- The soil in the zone C for both sides of the pipeline is extracted mechanically in layers parallel to the axis of the pipeline. The excavated material above the pipeline is removed by the straight edge of the excavator shovel moving sideways. Under the pipeline, the excavated material is removed in a similar manner. First, material is excavated in the zone "C" up to the clean bottom of the trench, at least 800 mm

below the bottom edge of the pipe. After that, the soil under the pipeline is broken by lateral movement of the shovel.

- e) The soil in zone “B” is always excavated manually with a spade, a shovel, or similar. Deterioration of soil under the pipeline is possible. For harder soils, the layer underneath the pipeline may be broken by pneumatic hammers so as to avoid damage to gas facilities.
- f) The machinery may move or stand in the axis of the pipeline only if the pipeline is secured by at least 500 mm layer and if the bearing capacity of the soil allows for it. The machinery operators must not move a full bucket of the excavator over the exposed pipeline.
- g) If there is a risk of sinking, the wheels or tracks must be supported either by a wooden board, or by other appropriate means. If the machine sinks, it must not extricate itself, but must be freed by another mechanism, standing outside the pipeline axis. It is strictly forbidden that the machinery turns over the pipeline except the slow movement to the working position. All work with mechanization equipment must be carried out so as not to damage the pipeline operated and its isolation.
- h) The operator of the excavator must have a clear view in the direction of the work performed and the supervisor must be in his field of vision. Should the situation so require, contact between the supervising employee and the machine operator must be ensured using a radio or a speakerphone.
- i) Where a machine stands perpendicularly by its longitudinal axis to the pipeline, there must be distance from the pipeline that it does not reach the pipeline while its working shovel is at its extended position. Excavation works may be carried out with machinery only if done away from the pipe, not in the opposite direction.

- 5.3.5 The representative of the operator (client) has the right and obligation to stop works if it is found that they are not subject to the principles and conditions negotiated for such work or if circumstances endangering safety have been identified.
- 5.3.6 All excavation works carried out in the protected zone of the pipeline can be made only after the contractor have been demonstrably familiarized with the safety and fire prevention measures based on the "V" order.
- 5.3.7 Exposing the telecommunications network as such (PSTN) is performed in a similar manner. First, a bore is made manually for accurate verification of the position of the cable route. The exposure of the cable to a distance of 0.5 m above, beside and below the cable route, is done entirely by hand. Machine mining is allowed at a distance greater than 0.5 m. Exposed cables, pipelines and other facilities must be secured while uncovered against damage and against changes in the position, which may damage the device.
- 5.3.8 Trenches and furrows must be excavated in accordance with relevant regulations, properly labelled and secured to prevent falls of persons and collapsing of soil (the method of securing the trench must be in accordance with Government Regulation No. 591/2006 Coll., as amended. "OZZ" is responsible for securing the excavations,
- 5.3.9 Before backfilling the trench, the contractor (supplier) must call "OZP" for inspection of the equipment, to ensure the absence of any damage and that the insulation around the exposed facility has been conducted in accordance with the below mentioned section. 5.5. Before backfilling the PSTN, the contractor is obliged to invite "OZP" for inspection of the insulation and facilities. If the backfill is made without the consent of the operator (client), re-exposure may be claimed at the contractor's (supplier's) expense.
- 5.3.10 The backfill is done usually by the excavated soil at both side of the pipeline at the same time. It is forbidden to pour the soil directly on the pipeline.
- 5.3.11 Mechanical protection of the pipe insulation is selected depending on the type of backfill soil by TPG 920 21.
For backfill soil type
„a“ no additional protection of isolation is necessary
„b“, „c“, „d“ insulation by 1000 g/m2 geofabrics
„e“, „f“ se pouring subbase and backfill 200 mm above the pipeline surface.
- 5.3.12 Concrete works using vehicles on the concrete mixture can be performed on condition that nearest axis will be at least 3 m from the edge of the pipeline.

5.4 LIFTING OF OBJECTS

- 5.4.1 When objects are lifted, the stabilization feet of the truck crane must be more than 3 meters away from the gas pipeline surface.
- 5.4.2 Suspended objects may not be moved above the equipment of N4G. Exception to this rule are the situations when the object lifting forms part of the working procedure (fittings replacement, installation of shaped pieces, insertion of adaptors, installation of weighting saddles, etc.). The smallest distance of the suspended object from the equipment equals double the height of the object above the terrain and the minimal distance between the object and equipment is 2 meters.
- 5.4.3 Whenever any of the operating mechanisms is located on unpaved surface above the pipeline or telecommunication line, it is necessary to increase the earth coverage of the pipeline or telecommunication line and to strengthen the surface by panels or by a different appropriate measure.

5.5 INSTRUCTIONS FOR INSULATION REPAIRS

- 5.5.1 Execution of insulation works and paintings is governed by the technical requirement TGN_TX_E01_06_01 Passive anti-corrosion protection of gas equipment.
- 5.5.2 After the character of insulation defect is identified, the faulty insulation must be removed down to the core metal and degree of pipeline material corrosion will be determined. The results obtained by representatives of N4G and contractor shall be continuously recorded in the construction log.
- 5.5.3 In the event of in-depth corrosion damage, the insulation will not be repaired. Instead, the parties shall carry out an official measurement, assessment, and they shall record the findings including the repair method determination, drawing, and surveying of the defect location into an official record. The official measurements shall be carried out by the transmission system operator.
- 5.5.4 Insulation works can be carried-out only by the personnel trained in insulation job, who have obtained an insulator's certificate based on successfully passed exams.

5.6 INSTRUCTIONS FOR WORK ON ELECTRICAL EQUIPMENT

- a) Any and all works on electrical equipment and in its vicinity must be carried out in accordance with "Safety regulations for operation and work on electrical equipment", ČSN EN 50110-1 (as amended and subsequently corrected), and other valid standards and regulations.
 - b) Persons assigned for work on electrical equipment or in its vicinity must be trained in first aid provision in the event of injuries or burns caused by electric current.
 - c) Graphic scheme of the actions to be performed during evaluation of character of works on electrical equipment and issue of necessary documentation is indicated at the end of this chapter.
- 5.6.1 Rules for work in HV equipment or in its vicinity
 - a) "B" order must be issued for all works on HV equipment and in its vicinity – see Annex No. 2. "B" order must be issued and signed y person with relevant

qualification pursuant to the provisions of ČBÚ and ČÚBP Regulation No. 50/1978 Coll., as amended.

- b) "B" orders are recorded by an employee appointed by the head of the particular operating area.
- c) "B" order issue will not be required only for equipment which has not been powered yet and where there is no HV line in its vicinity.
- d) Person responsible for electrical equipment or work manager must ensure that the employees doing the work will be informed about the course of the works both before commencing with the work and after its completion. Before work commencement, the work manager must inform the person responsible for electrical equipment about the type, place, and importance of the work carried out on the electrical equipment. Written information will be preferred, mainly if the work is complicated. Only the person responsible for electrical equipment can give consent with work commencement to the work manager. This requirement must be followed even in the event of work interruption and termination.

5.6.2 Rules for works on live LV electrical equipment

- a) All works on live "LV" equipment require the "B" order and are subject to the same rules as works on HV equipment or in its vicinity.

5.6.3 Rules for works, securing, and transfer of workplace on LV equipment in secure condition without voltage

- a) Equipment operator will switch off and disconnect the equipment. The equipment on which or near which the work should be carried out shall be disconnected from all possible power sources. At places, where the equipment is switched off/on, it is necessary to post safety signs pursuant to ČSN ISO 3864, as amended and subsequently corrected, and pursuant to the provisions of Government Regulation No. 11/2002 Coll., which determines the appearance and location of the signs, as amended. If the work is carried out on equipment protected with current fuses, the plug fuses and heads must be stored safely after removal. Possible electrical charge (for example from cable lines or from condensers) will be removed. For outdoor LV lines, the conductors must be short-circuited with earthing at the workplace.
- b) Equipment operator shall safely and reliably verify (for example using a suitable circuit tester) that the part of the equipment, where the works should be carried out, is without voltage on all poles, phases, and supply lines.
- c) Depending on the local conditions, the equipment operator shall determine relevant measures preventing personnel from entry into areas with live parts by mistake (for example using fencing, path designation, signs, etc.).
- d) Having secured the workplace, the person responsible for the workplace securing together with the work manager will confirm that all safety measures at the workplace have been adopted. Operator's responsible employee together with the work manager shall draw-up a record on workplace delivery and acceptance in power-less condition; possible specimen of the record is available in Annex No. 3 or Order V, part I.
- e) Before commencement with every work and after every interruption, the power-less condition has to be re-checked.
- f) Works in the vicinity or in parallel with "HV" shall be fully subject to the provisions of ČSN EN 50110-1, as subsequently amended and corrected.

- g) All persons involved must be withdrawn after work completion. All tools, equipment, and instruments used during the work must be removed. Then, the power connection procedure can commence.
- h) All earthing and safety equipment and/or apparatuses must be removed from the workplace. All locks and/or other instruments used to prevent repeated activation, as well as all designations used for the work must be removed.
- i) Once the equipment commissioning procedure has commenced, the equipment must be considered live.
- j) Once the work manager believes that the electrical equipment is ready for power supply restoration, the equipment must be verified by the employee responsible for electrical equipment, who will confirm that the work has been completed and that the electrical equipment can be commissioned.

5.6.4 Conditions for works on electrical equipment in hazardous spaces (space in which an explosive gaseous atmosphere is or can be present – see ČSN EN 60079-10, as amended and subsequently corrected).

- a) When working on electrical equipment in hazardous spaces, “V” order (with part II) has to be issued.
- b) When technology is in operation, it is prohibited to perform electrical measurement aimed at verification of electrical parameters of such electric equipment in hazardous spaces. These in particular comprise:
 - equipment insulation state measurement
 - earth resistance measurement
 - breaking loop impedance measurement
 - measurement of breaking capacity of voltage and current protections
 - voltage drop measurement
 - transition resistance measurement
 - line current load measurement
- c) When measuring the parameters of long lines on idle technology and on equipment with condensers, it is important to count on a capacity charge and to discharge it after the end of measurement.
- d) Usage of temporary and provisional electrical equipment in hazardous spaces is prohibited.
- e) Only the actions not requiring intervention into the technology can be performed when the technology is in operation – for example removal of covers, closures opening, control of limit states triggering (for example proximity switches testing). Only the visual inspection can be performed during operation in practice.
- f) Only the tools and aids incapable of producing spark upon impact or fall can be used in hazardous spaces. Electrical portable lights and measuring equipment can be used only in spark-free design.
- g) Work on electrical equipment in hazardous spaces can be performed only if the equipment is without voltage.
- h) In inevitable situations, it is possible to repair live electrical equipment or disconnected electrical equipment during technology operation provided that the terms and conditions stipulated by ČSN EN 50110-1, as amended, and subsequently corrected, are complied with and if permanent gas concentration monitoring is provided. Such works can be carried out only under supervision of an authorized employee and only on the groundwork of written order of the head of operating area or person authorized by him/her (responsible employee).

- i) Replacement of bulbs and fuses in hazardous space is possible only if the equipment is powered off; equipment is the light fittings with lockout switch. For these works, order V with part II must be issued.

5.6.5 Technical conditions for extraordinary works and activities performed in hazardous space Zone 2 (former SNV1) on live equipment and in situations when non-sparking equipment is not available.

- a) In some extraordinary situations, it is necessary to eliminate faults very quickly due to operational reasons. In these cases, works are performed on exposed parts of communication equipment, low and safe voltage equipment, or the works are performed without non-sparking equipment in hazardous space (applies to ZONE 2 only). This extraordinary activity can be performed on the groundwork of ČSN EN 60079-17, as amended and subsequently corrected, under the following conditions.

Before commencing with the works, the applicant or work manager must ensure issue of order "V" (with part II) and order "B" for employees performing immediate elimination of extraordinary faults in ZONE 2 on live equipment and/or when non-sparking equipment is unavailable. Furthermore, the applicant – work manager must ensure that the portable gas detector used complies with the following technical conditions:

- it must be equipped with light and possibly also with sound signalization of the flammable gas concentration exceeding the limit of 10% LEL,
 - it must be equipped with light and possibly also with sound signalization to confirm that the equipment is in operation,
 - it must be equipped with light and sound signalling of battery level decrease activated not less than 10 minutes before the battery becomes completely discharged,
 - it must have a valid calibration record confirming its inspection and accuracy,
 - it must be verified with gas that can occur at the workplace and form explosive mixture (mostly the natural gas in N4G),
 - exceeding the flammable gas concentration level of 40% LEL must be (if not signalled) permanently visible on the instrument scale,
 - equipment delivered after July 1, 2003 must be designated with CE mark proving its compliance with EU standards,
 - employee appointed in the order "V" to the position of atmosphere inspection must be demonstrably acquainted with flammable gas detector operation.
- b) All employees listed in the order "V" and performing the specified works in hazardous space are obliged to observe relevant safety regulations, technical standards, and technological procedures applicable to their work and must have required qualification and knowledge for such work on live electrical equipment in hazardous space. Employees not listed in the order "V" may not participate in the above-mentioned works.
 - c) Work on exposed parts of live electrical equipment or work without non-sparking equipment in hazardous space can be performed under the following conditions – applies to ZONE 2 (SNV1):
 - work manager shall ensure compliance with "Safety regulations regarding operation and work on electrical equipment" for the entire period of work execution,
 - work manager will ensure compliance with safety measures and defined working procedure for the entire period of work execution,
 - work manager will ensure usage of relevant protective equipment specified for individual activities,
 - personal protective equipment and metering and security equipment used for work on live systems or on disconnected electrical devices on running

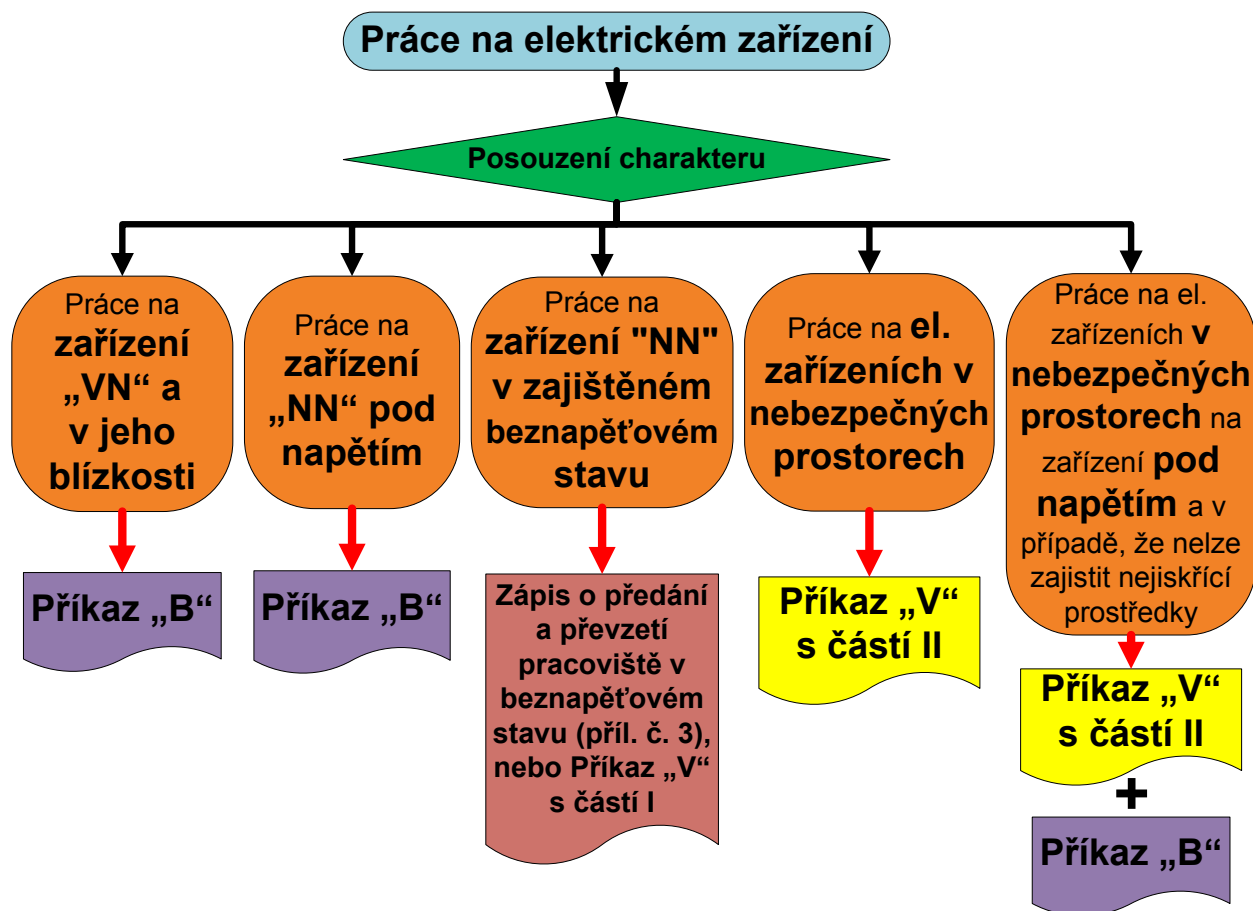
technology where an explosive mixture can be formed must not be capable of initiating an explosion,

- work manager or employee appointed in the order “V” shall ensure permanent atmosphere inspection, i.e., usage of a portable detector of flammable gases in accordance with its operating instructions for the entire period of work execution. Flammable gas detector will be switched on no less than 5 minutes before entry into the hazardous space. Running flammable gas detector will be located in the nearest possible distance from the workplace and the responsible person will observe whether any flammable gas is present in given place. The person shall be responsible for excluding the possibility of unacceptable flammable gas concentration in the hazardous space for the entire term of the work. The flammable gas detector can be removed only after specified work is completed and all personnel leave the work area.
- d) The procedure in the event of flammable gas presence signalling / detector fault. Work manager or the employee appointed in the order “V” shall adopt the following measures whenever the first signalling limit (i.e., 10% of LEL) is reached or if equipment fault or low battery are signalled:
 - all employees will interrupt works and secure the electrical equipment against possible ignition of flammable (explosive) mixture, i.e., disconnect the electrical equipment from power supply source, or secure the electrical equipment in “firm closure” or “safe closure”.
 - all employees will cease to use spark forming equipment
 - work manager or the employee appointed in the order “V” shall ensure that all personnel leaves the work space whenever the flammable gas presence over 40% of LEL is reached or if the flammable gas detector is switched off. Work can be restored only after thorough ventilation and subsequent inspection of the atmosphere (with detector) confirming absence of hazardous flammable gas concentration.
- e) Termination of work in hazardous space (ZONE 2).

After the works on live equipment or without non-sparking tools in hazardous space (ZONE 2) is completed, the work manager shall ensure the following:

 - electrical equipment securing by means specified for given equipment type,
 - confirmation of work completion, possible safeguarding of the space in accordance with the safety requirements,
 - announcement of work completion to the head of the operating area or to the authorized employee. Provisions of Section 5.6.4. shall fully apply.

5.6.6 Graphic scheme of the process for assessment of character of works on electrical equipment.



Work on electrical equipment

Assessment of character

Work on HV electrical equipment and in its vicinity	Work on live LV equipment	Work on LV equipment in secure power-free condition	Work on electric equipment in non-secured premises	Work on electric equipment in non-secured premises and on live equipment and/or whenever the non-sparking equipment can not be obtained
Order B	Order B	Record on handover and takeover of the workplace in power-free condition (Annex 3) or order "V" with part I	Order V with part II	Order V with part II
				Order B

5.7 INSTRUCTIONS FOR WORKS, WHICH ARE NOT PERFORMED IN ENVIRONMENTS WITH EXPLOSION HAZARD AND IN PROTECTIVE ZONE OF GAS PIPELINE.

- 5.7.1 Works performed by contractors in N4G premises, which are not performed in environments with explosion hazard (zone 0, 1, 2), character of which does not require technology shutdown and securing and which are performed without use of open fire (for example painting, fencing, lawn mowing, etc.) require issue of written working procedure pursuant to Section 5.2.5 hereof. However, it is not necessary to issue order "V" for works with increased hazard.
- 5.7.2 For works, which are not performed in environments with explosion hazard, but character of which requires shutdown and securing of the equipment, and which are performed without open fire, it is necessary to hand over and take over the shut down and secured equipment using the order "V" form – part I only (it is not necessary to issue part II or III).

5.8 INSTRUCTIONS FOR WORKS PERFORMED IN ENVIRONMENTS WITH EXPLOSION HAZARD AND IN PROTECTIVE ZONE OF GAS PIPELINE

- 5.8.1 Works in environments with explosion hazard and in the protective zone of the gas pipeline may be performed only on the groundwork of order "V", including part II (part III is not filled-in), (in accordance with Government Regulation No. 406/2004 Coll. on detailed requirements on assurance of safety and health protection when working in environments with explosion hazard). The order shall be issued on a special form – for specimen, see Annex No. 4.
- 5.8.2 Work manager or another person appointed by him in writing must not leave the workers for the entire period of works in the environment with explosion hazard and must not perform any other activity but the supervision. Instruction to commence with the works may be issued only if all fire and safety measures are executed, in particular if corresponding composition of atmosphere at the workplace is ensured, i.e., maximum methane content of 0.44 % vol. (10 % LEL). Compliance with these measures must be checked personally by the work manager or by the appointed person.
- 5.8.3 Person performing check of atmosphere composition shall be obliged to check the atmosphere composition at the workplace with the frequency specified in order "V", part II. While working with instruments for measurement of concentrations of gases, this person will be responsible for reliable function of the instrument, correctness of data readings, and for correct evaluation of metering results. This means that the used portable gas detector must satisfy the following technical conditions:
- it must be equipped with light and possibly also with sound signalization of the flammable gas concentration exceeding the limit of 10% LEL,
 - it must be equipped with light and possibly also with sound signalization to confirm that the equipment is in operation,
 - it must be equipped with light and sound signalling of battery level decrease activated not less than 10 minutes before the battery becomes completely discharged,
 - it must have a valid calibration record confirming its inspection and accuracy,
 - it must be verified with gas that can occur at the workplace and form explosive mixture (mostly the natural gas in N4G),
 - exceeding the flammable gas concentration level of 40% LEL must be (if not signalled) permanently visible on the instrument scale,

- equipment delivered after July 1, 2003 must be designated with CE mark proving its compliance with EU standards,
- employee appointed in the order “V” to the position of atmosphere inspection must be demonstrably acquainted with flammable gas detector operation.

If the atmosphere composition no longer corresponds to the specified conditions, the person (employee) managing the works will interrupt the works.

- 5.8.4 Interruption of the works and their re-starting in central areas must be reported by the works manager to the control room of relevant OA.
- 5.8.5 Interruption of the works and their re-starting in central areas must be reported by the works manager to the control room of relevant OA.
- 5.8.6 Connection between the workplace and the OA control room shall be established by radio or by telephone - responsibility of the work manager.
- 5.8.7 Order for works in environments with explosion hazard within the operating area or relevant equipment shall be issued separately for each workplace and its maximum validity will be 120 hours provided that there will be no change in the executing personnel or in the conditions indicated in order “V”.

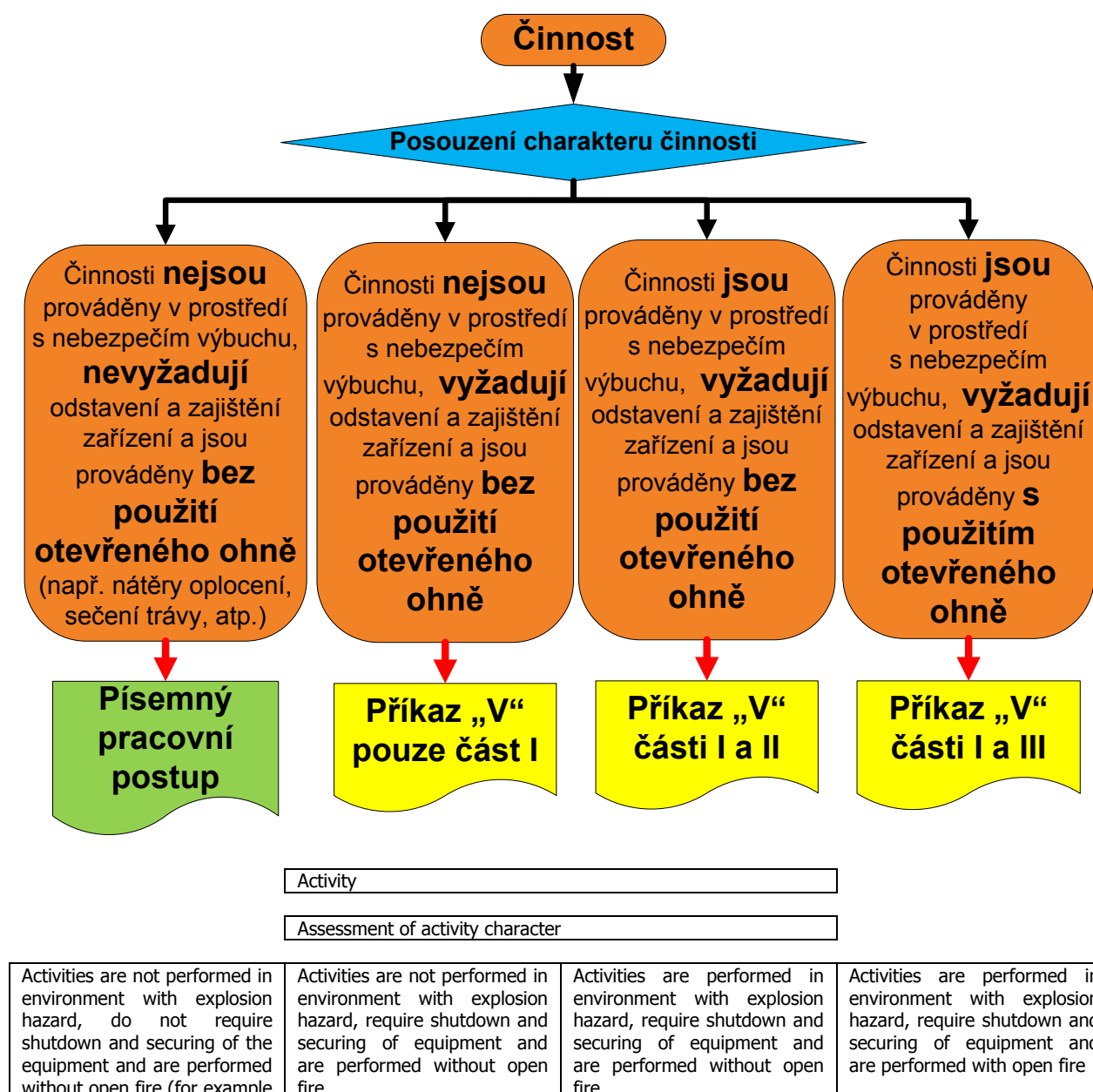
5.9 INSTRUCTIONS FOR WORK WITH OPEN FIRE

- 5.9.1 In the distance of 50 meters to 12 meters from the gas pipeline ground plan, the works with open fire can be carried out only with written consent of the operator (recorded for example in the construction log).
- 5.9.2 Inside fenced areas (CS, SV, TS...) the works with open fire can be carried out only on the groundwork of "V" order including part III (part II will not be filled-in). This shall not apply to buildings where no gas technology is located, where no risk of concentration of flammable liquid vapours reaching explosion limit and explosive mixture of flammable dusts exists, such as administrative buildings, garages, workshops, or other premises designated and equipped as a permanent welding workplaces etc.
- 5.9.3 Work with open fire in the distance shorter than 12 meters from the pipeline and its accessories (i.e., even in the protective zone) is possible only on the groundwork of "V" order including part III (part II will not be filled-in). Screwed joints and atmosphere must be checked before work commencement. In distance shorter than 5 m from the pipeline, the atmosphere quality must be checked continuously. Inspection results shall be recorded in "V" order.
- 5.9.4 "V" order shall be issued by the operator (operating entity) based on a requirement submitted by the responsible employee of the contractor. If the place and nature of executed work is not changed, the maximum order validity shall be 120 hours.
- 5.9.5 The order shall be issued on a special form – for specimen, see Annex No. 4.
- 5.9.6 If a "V" order is issued for works with increased hazard, it is possible to carry out only those works, which are expressly stipulated in such order. It is prohibited to use open fire for any other works.
- 5.9.7 When the insulation is repaired with torch-on materials, only the soft flame can be used (for example propane-butane mixture) for pipeline surface drying. Otherwise, the flame can be only used to heat the surface of the insulating material or contact surface of torch-on and repaired insulation for their smoothening.
- 5.9.8 Exception in open fire usage is the facilities defined by the operator (for example the building of check metering point (CMP) on route closure, workshops, etc.). These areas and premises shall be determined by operation head in writing based on the recommendation of person qualified in the area of fire protection. Document can be stored at the head of the operating area. These premises and spaces will be designated with "Smoking permitted" and "Open fire usage permitted" signs.
- 5.9.9 Before any work with open fire is permitted, fire hazard at the workplace must be first assessed at all times, considering the location, area, facility, or technology. Fire safety conditions and fire protection measures shall be determined by a person qualified in FP, technician or FP preventer, alternatively by a manager who passed FP training for managers.
- 5.9.10 After completion of works with increased fire hazard, OZZ and OZP will confirm the work completion in writing into "V" order.

- 5.9.11 As the fire protection (compliance with fire safety conditions, fire-safety measures, etc.) forms an integral part of every work, also the responsibility for its assurance stays with the contractor (supplier), i.e., with the entity performing the work.
- 5.9.12 The fire supervision for securing performed activities shall be a part of ensuring fire protection conditions. Fire supervision can be carried out by a person with qualifications of a member of preventive fire patrol. The contractor can obtain professional training from the customer or the contractor shall submit a report on his/her own professional training to the customer.
- 5.9.13 Work manager or another person appointed by him in writing must not leave the workers for the entire period of works with open fire and must not perform any other activity but the supervision. Instruction to commence with the works with open fire may be issued only if all fire and safety measures have been executed, in particular if corresponding composition of atmosphere in the pipeline and in the excavation is secured, i.e., maximum methane content of 0.44 % vol. Compliance with these measures must be checked personally by the work manager or by the appointed person.
- 5.9.14 Before commencing with the works, the works manager or another person appointed by him in writing must verify in person that there are no hazards of flame occurrence in the vicinity of the workplace (min. 12 meters) and that there are no flammable gases present (check of screw joints tightness).
- 5.9.15 Components of machines lubricated with grease, which are in the area with fire hazard, must be wrapped or covered in such way, which will protect them against inflammation by sparks, radiating heat, hot metal drops, etc., unless the flammable materials cannot be completely removed from their surface. Removal of lubricants must not be performed with flammable liquids, solvents, or flame.
- 5.9.16 Person checking the atmosphere composition will be obliged to check atmosphere composition continuously during welding on pipeline with pressurized gas. Equipment for atmosphere composition measurement must satisfy the conditions previously mentioned in section 5.7.5. If the atmosphere composition no longer complies with the standard, or if the gas pressure in the pipeline decreases below the overpressure limit or exceed the overpressure specified in the N4G Welding Procedures, the work manager will interrupt the works with open fire or electric arc.
- 5.9.17 Interruption of the works and their re-starting in central areas must be reported by the works manager to the control room of relevant OA.
- 5.9.18 After the end of the works, the work manager must review the workplace and its surroundings and verify that the safe condition has been restored, that there is no risk of fire or environmental accident.

5.9.19 This site inspection after the completion of the works shall be repeated by the authorized employee min. every hour for at least 8 forthcoming hours. Fire supervision after the end of the works does not have to be performed if the workplace and adjacent premises are equipped with functional electronic fire signalling and at the same time with stable extinguishing equipment. If these premises are equipped with electronic fire signalling only, it is possible to leave out the fire supervision only if person capable of performing the primary fire extinguishing action will be present at the site. Person capable of performing the fire extinguishing action on the spot will be the shift employee of the control room (non-stop operation) to which the electronic fire signalling will be terminated. Fire supervision does not have to be performed at permanent welding workplaces intended and equipped for this purpose.

5.10 GRAPHIC SCHEME OF THE PROCESS FOR ASSESSMENT OF CHARACTER OF WORKS (ACTIVITIES) PERFORMED ON N4G EQUIPMENT.



lawn mowing, painting, fencing, etc.)			
Written working procedure	Order "V", part I only	Order V, parts I and II	Order V, parts I and III

6 REFERENCES

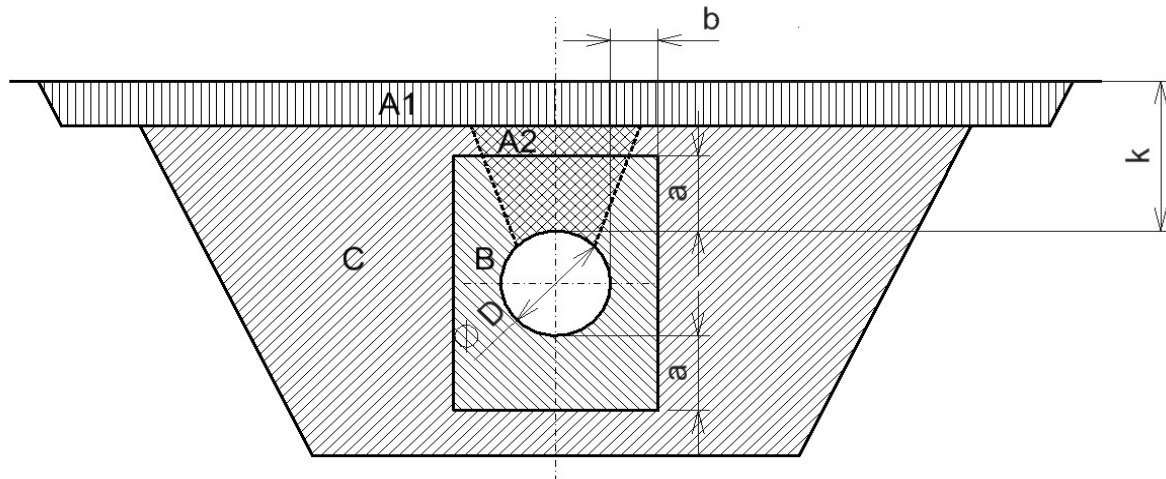
Act No. 133/1985 Coll.	fire protection;
Act No. 127/2005 Coll.	on electronic communications and on amendment to some related acts;
Act No. 350/2011 Coll.	on chemical substances and chemical mixtures and on an amendment to some other acts (Chemical Act), as amended;
Act No. 458/2000 Coll.	on Business Conditions and Public Administration in the Energy Sectors and on Amendment to Other Laws (Energy Act);
Act No. 158/2009 Coll.	which amends Act No. 458/2000 Coll., on Business Conditions and Public Administration in the Energy Sectors and on Amendment to Other Laws (Energy Act), as amended;
Act No. 251/2005 Coll.	on labour inspection;
Act No. 253/2005 Coll.	which amends certain acts in connection with adoption of the act on labour inspection;
Act No. 309/2006 Coll.	on further conditions relating to occupational and health safety assurance, as amended
Government Regulation No. 494/2001 Coll.	stipulating methods of filing, reporting and sending records on accidents and authorities and institutions to which shall a work accident be reported and a record on accident sent
Government Regulation No. 495/2001 Coll.	stipulating a scope and more accurate terms of assigning personal protection working resources, washing, purifying and disinfecting resources
Government Regulation No. 406/2004 Coll.	on further requirements to ensure safety and health protection for work in the explosion dangerous environment
Government Regulation No. 591/2006 Coll.	on further minimum requirements on safety and health protection for work on building sites
ČÚBP Regulation No. 48/1982 Coll., as amended by Regulation No. 192/2005 Coll.	which determines the basic requirements for providing safety at work and technical facilities;
Ministry of Interior Regulation No. 87/2000 Coll.	conditions of fire safety during welding and heating of bitumen in melting vessels;
Ministry of Interior Regulation No. 246/2001 Coll.	on Determining the Requirements for Fire Safety a Performance of State Fire Surveillance (regulation on fire prevention)
ČSN EN 61779-1	Electrical equipment for detection and measurement of flammable gases – Part 1: General requirements and test methods
ČSN EN 60079-10	Electrical equipment for explosive gas atmospheres – Part 10: Determination of hazardous spaces
ČSN ISO 3864	Safety colours and safety signs
N4G Technological Procedure	Earthworks No. 11/2012
Technical Rules TPG – G 905 01	Basic Safety Requirements for Operating Gas Facilities;

The above-mentioned list of legislative documents shall be deemed valid versions of these documents!

7 ANNEXES

- No. 1 Zones for excavations during pipeline defect repairs
- No. 2 Order “B”
- No. 3 Record on handover and takeover of the workplace on electric equipment in power-free condition
- No. 4 “V” order for execution of works with increased hazard
- No. 5 Permit for (operating - inspection) pipeline route cleaning
- No. 6 Permit for assembly works on the transmission system
- No. 7 Permit for TRS, TS commissioning
- No. 8 Permit for commissioning of the line section of the pipeline
- No. 9 Permit for drilling and closing works on the transmission system
- No. 10 Record on telecommunication cable damage
- No. 11 Record on payment for natural gas required for technological consumption of gas pipelines
- No. 12 Record on gas utilization during operating actions with the need for pipeline depressurization
- No. 13 Record on works during operating actions

Zones for excavation works



D pipeline external diameter

K pipeline cover

A₁ mechanical excavation of the soil

A₂ manually excavated bore to verify the pipe position

B manual earthworks zone

C zone of earthworks where machinery may be used for soil excavations

a, b ... minimum distance from the pipeline surface for earthworks with the use of machinery:

pipeline under pressure:

non-inspectable pipelines

"a" = 50 cm

"b" = 30 cm from the pipeline surface

inspectable pipelines

"a" = 20 cm

"b" = 20 cm from the pipeline surface

pipeline without pressure:

"a" = 5 cm

"b" = 5 cm from the pipeline surface

D pipeline external diameter

o pipeline axis

k pipeline cover

A₁ soil excavation

A₂ manual bore

B manual earthworks zone

C zone of earthworks where machinery may be used for soil excavations

a minimum distance from the pipeline surface for earthworks with the use of machinery:

for pressurized pipeline: **"a" = 30** from the pipeline surface

for pipeline without pressure: **"a" = 10** from the pipeline surface

b minimum distance from the pipeline axis for earthworks with the use of machinery:

(D/2 + a)