



TECHNICAL CONDITIONS

for Works and Activities in Objects, Hazardous Spaces, Zones,
and in the Vicinity of Networks
Administered by NET4GAS, s.r.o.

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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, objects, 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 spaces 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.

2. SCOPE OF APPLICABILITY

Technical and safety conditions pursuant to the provisions of Item 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 relevant region or Head of Asset Engineering can approve a temporary exception from these TC. Exception from the TC for DOK (long-distance optical cables) and DK (long-distance cables) may be granted by the inspector of N4G's cable networks. All exceptions must be recorded in implementing design documentation/work procedure or in the construction log.

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 objects and other facilities.

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 stations.
PPE	Personal protective equipment.
OP DK+DOK	Protective zone of long distance metallic and fibre line.
NDD	Network Documentation Department
PPQ	Responsible employee of the customer.
OZP	Responsible employee of the transmission system operator.
OZZ	Responsible employee of the contractor.
Commercial Conditions of N4G	Commercial terms and conditions for assurance of occupational health and safety (OHS), environmental protection (ENV), and fire protection (FP) issued pursuant to the provisions of Section 273 of Act No. 513/1991 Coll., Commercial Code, as amended.
FP	Fire protection
TS	Transfer station
N4G	NET4GAS, s.r.o., Na Hřebenech II 1718/8, Prague 4 - Nusle, 140 21
ZONE	Environment with explosion hazard
TOPA	Technical and organizational project assurance.
TR	Technical Conditions for Works and Activities in Objects, Hazardous Spaces, Zones, and in the Vicinity of Networks and Lines Administered by N4G.
PTN	Proprietary telecommunication network.

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3.2. TERMS AND DEFINITIONS

Hazardous spaces of N4G (spaces and 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.),
- premises classified as “hazardous” pursuant to the provisions of ČSN EN 60079-10-1, i.e., in an explosive atmosphere is or can be present,
- protected areas (proximity) of electrical equipment (ČSN EN 50110-1 ed.2),
- 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 carried out (Section 5 of Decree 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 spaces and premises designated as hazardous in a contract for work, minutes on workplace handover, or in any other binding document.

Note: It is prohibited to use mobile telephones and radio transmitters including measuring instruments within the premises classified as ZONE 0, 1, 2 that are not in "EX" design, unless alternative measures are specified

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.
Flammable gas detector	An 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 ČSN EN 690079-29-1
Spark safety	Method of protecting electrical equipment for hazardous space (designated as “i”) pursuant to the provisions of ČSN EN 60079-10-1.
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 used in the hazardous space (designated as “EX”, “E EX”).
N4G Object	A part of the gas system, for example shut-off valve, transfer and regulating station, compression station, merging and splitting node, etc.
Region	Region (formerly operating area) – region Bohemia North, region Bohemia South, region Moravia
Protective zone	Pursuant to the provisions of Section 68 (2) of Act No. 458/2000 Coll., as amended, 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.

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Protective zone DK+DOK	Pursuant to the provisions of Section 68 (2) of Act No. 458/2000 Coll., as amended, 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.
Size of DK+DOK PZ	Defined in Section 68 (2)(c) of Act No. 458/2000 Coll.
Fixed closure	Method of electrical equipment securing for use in hazardous space (designated with "d").
Authorized employee	A managing employee (employee of N4G) authorized in writing by region head 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 locations where employees are working, and which are subject to direct and/or indirect supervision by the employer.
Hazardous spaces/premises	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	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.
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, vapor 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, vapor or fog.
Zone 2	Space where formation of explosive atmosphere consisting of mixture of air with flammable substances in form of gas, vapor 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. RESPONSIBILITIES 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 (OZZ), – in case of line crossing
- b) The responsible employee of the customer or 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 Decree 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 work procedure):

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- responsibility for correctness of the work procedure, where fire safety and occupational health and safety conditions must be also stipulated, shall be borne by the author of such procedure,
- fire safety conditions applicable to the work 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 managing employee appointed by the head of the region.
- the work procedure for activities in hazardous premises must be approved by head person of the contractor (supplier) and by the head employee of the operator (customer),
- the persons involved must be informed about the work 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 premises 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, OSH and fire protection assurance, including determination of conditions stipulated by the designer, technological procedures, or work 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. This does not foreclose the possibility of action verification by the transmission system operator.

In the event of any unforeseen complications, the OZZ will request assistance through OZP in necessary scope.

- d) Opinions and positions within the meaning of Act No. 458/2000 Coll., as amended (the Energy Act), regarding individual actions of foreign entities interfering with protective or safety zones of a gas pipeline or proprietary telecommunication network, shall be drawn-up on behalf of N4G by the Network Documentation Department (possibly in cooperation with other professional departments and/or operations of N4G as required). Implementation of the conditions stipulated in NDD's opinion (locating the underground equipment, professional supervision, etc.) shall be ensured for the applicant by individual regions after handover from NDD. Central registration of all opinions and positions on behalf of N4G is maintained and processed by NDD 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 NDD, the responsible employee of the particular region will issue "Record on Intervention into Protective/Safety Zone of N4G", discontinue further works, and order negotiation of application with NDD Prague.
- e) Particular section of an opinion regarding any 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 region on behalf of N4G; such region shall also verify compliance with the conditions of the opinion. Summary opinion shall be issued by N4G NDD in Prague.

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5. TECHNICAL CONDITIONS FOR WORKS AND ACTIVITIES

5.1. GENERAL PROVISIONS

- 5.1.1. Persons that carry out works in hazardous spaces, in N4G objects, in protective and safety zones or near PTN shall in particular comply with relevant provisions of the following regulations:
- Act No. 458/2000 Coll., as amended, (Energy Act)
 - Act No. 127/2005 Coll. on electronic communications, as amended,
 - Act No. 251/2005 Coll. on labor inspection, as amended,
 - Act No. 253/2005 Coll. which amends certain acts in connection with adoption of the act on labor inspection,
 - Act No. 406/2004 Coll., on more detailed requirements on occupational and health safety assurance when working in environment with explosion hazard, as amended,
 - Act No. 309/2006 Coll., on further conditions relating to occupational and health safety assurance, as amended,
 - ČÚBP Decree No. 48/1982 Coll., as amended, which defines the basic occupational health safety and technical equipment safety requirements (valid only as amended by Decree No. 192/2005 Coll.),
 - Government Regulation No. 591/2006 Coll., as amended, on more detailed minimal requirements on occupational and health safety at construction sites,
 - technical rules TPG 905 01, as amended, Basic requirements on gas equipment operational safety,
 - Decree of the Ministry of Interior No. 87/2000 Coll., determining the conditions of fire safety during welding and heating of bitumen in melting vessels,
 - other related general legal and technical regulations, management system documents, and other internal regulations, work procedures, and conditions issued by N4G.
- 5.1.2. The contractor (supplier) shall appoint its 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 objects of N4G and in the vicinity of PTN N4G must be negotiated with the operator (customer), who will 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, objects of N4G, hazardous spaces, and in the vicinity of PTN N4G 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 (plowing, 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 region 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 PTN N4G and within protective zone of telecommunication lines must be managed by responsible contractor'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 objects of N4G. Movement around the areas is allowed over dedicated paths only.

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- 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 objects of N4G without a special permit is strictly prohibited (see Section 5.9)!!!
- 5.1.11. Employees of contractors (suppliers) are prohibited to carry out any manipulation 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 gas equipment shall be immediately reported to relevant operating region. Damage must be recorded (written record is required), stipulating the method and party responsible for relevant measures and repairs. Record shall be issued by relevant region.
- 5.1.15. Any and each damage to the telecommunication lines shall be immediately reported to the particular operating region and also to the specialist - inspector, cable networks. Damage shall be recorded in "Record on Telecommunication Cable Damage".
- 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 objects 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 premises, objects, 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 Regulation No. 495/2001 Coll., as amended.
 - b) When working and performing activities in N4G's objects, 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 areas classified as ZONE 2, 1, 0, when working on or handling any gas technology with possible risk of gas leakage and during any 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, anti-static footwear, and further in accordance with the guideline Principles of Occupational Health and Safety Organization issued by N4G.
 - d) Usage of appropriate PPE by superiors 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 gate house of the particular object (facility). When working or performing any kind of activities within the objects of N4G, all employees must be visibly designated with logo of their employer and possibly also with their name tag.

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- 5.2.2. Before entering into objects without permanent attendance, the employees of supplier organizations (contractor) shall be obliged to report to the foreman of relevant region (during business hours) or to N4G Dispatching. Contact information is available at the entrance into each object.
- 5.2.3. There are Operating Logs in objects without permanent attendance. Each visitor to such object 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, fire protection requirements, these TC, or breach of the conditions stipulated by the agreement by foreign employees can constitute reason for interruption or discontinuation of works or for contract termination with their employer.
- 5.2.5. A written work 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 work procedure shall be prepared by the contractor (supplier). All work procedures are subject to approval and permitting by the head of operating region or his relevant deputy. The work procedure shall remain effective only for the duration of the event (project) 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 the coordinator is not stipulated by Act No. 309/2006 Coll., the obligation of OHS coordination is stipulated only by the Labor 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 Labor Code shall be coordinated by employees of N4G.
- 5.2.7. It is prohibited to carry out any earthworks without prior verification of underground lines and equipment position (cables, gas pipelines, earthing elements, etc.) in 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 specify a place outside the object 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 and/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 regulations and decrees 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 valid regulations - see the Commercial 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's operating facilities will be dealt with by the region 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 dedicated technical equipment to the equipment in operation is possible only with consent given by the Startup committee provided that all prerequisites 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.

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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 designated 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 alarm regulations and with "Fire!" and "Gas!" signals and will define actions to be taken in the event of such signals.

5.3. INSTRUCTIONS FOR EARTHWORKS EXECUTION IN PROTECTIVE ZONES OF GAS PIPELINES AND NEAR N4G'S TELECOMMUNICATION NETWORKS

5.3.1. In order to prevent damage to underground equipment of NET4GAS, it is absolutely necessary to mark out all underground equipment in the area of interest before commencement with any earthworks. This namely comprises

- marking out of own gas pipelines,
- marking out of metallic and fibre optic cables,
- marking out of ACP cables,
- marking out of electric connections and power cables,
- marking out of underground equipment of other owners.

Building contractor shall request the marking out of underground structures before commencing with the earthworks.

Relevant local technologist is responsible for NET4GAS' equipment marking out.

5.3.2. Location of such equipment shall be demonstrably communicated to all affected employees of the operator and contractor. Marking out of all N4G's underground lines is usually performed if any earthworks are carried out less than 50 meters away from any gas pipeline or PTN.

5.3.3. In distances greater than 4m from the ground projection of the gas pipeline or PTN cables, the earthworks can be carried out without direct supervision of the operator with written permit of the gas equipment operator.

5.3.4. If the distance is shorter than 4m from the ground projection of the gas pipeline or PTN cable, any earthworks subject to written permit may only be carried out under the supervision of gas pipeline operator while it is necessary to observe the procedure described in sections 5.3.7 through to 5.3.14.

5.3.5. Works within protective zones of gas pipelines (4m from the ground projection of the gas pipeline) may commence and take place on the groundwork of "V" order after all involved contractor's employees are demonstrably informed about the safety and fire fighting measures.

5.3.6. When performing earthworks within objects and areas of N4G and along line sections of pipelines, any mechanical equipment may be used only to the minimum distance "a", "b" from the gas pipeline surface as illustrated in Figure No. 1.

5.3.7. Earthworks in protective zones may only be performed according to approved technological procedure drawn-up pursuant to the following requirements.

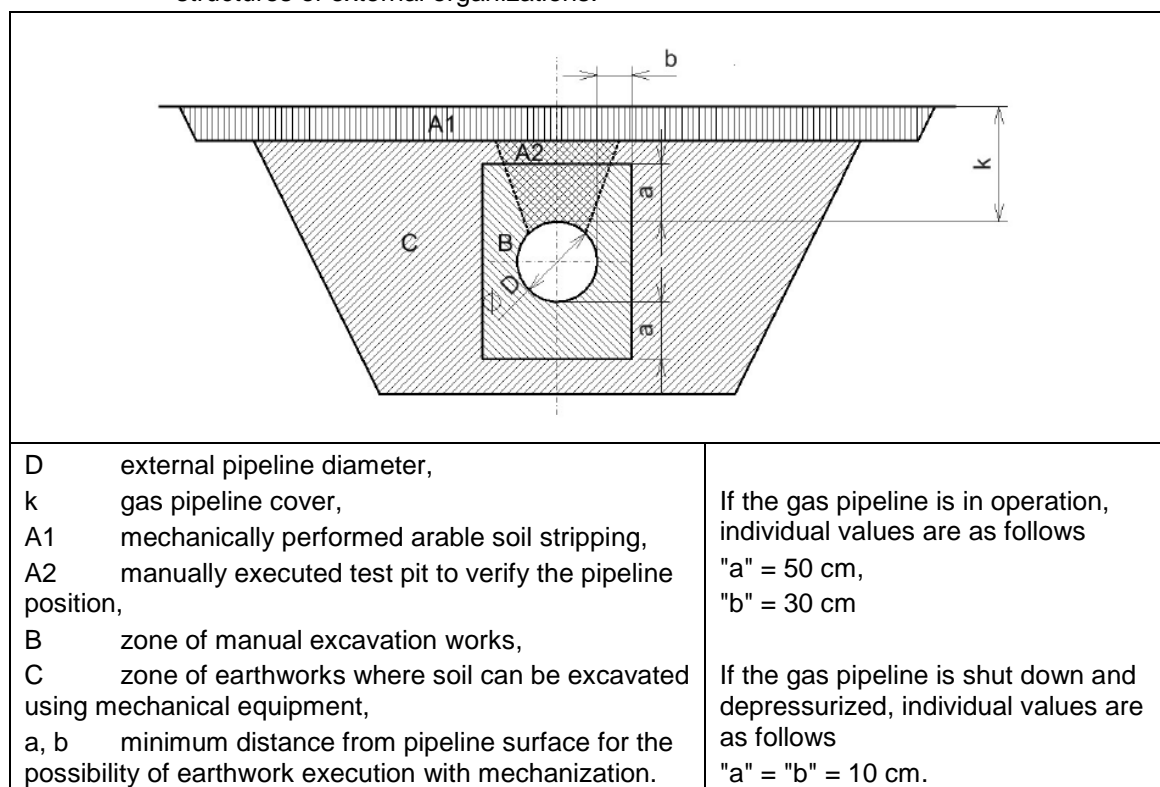
The technological procedure shall describe the sequence of individual work operations

- training of OZZ and OZO personnel in N4G's technical conditions, execution of training record, and provision of N4G's technical conditions,
- OZZ and OZO shall train their own employees who will work at the construction site, add them to the list of workers, and deliver the list to OZP,
- the existing gas pipeline and cable networks shall be marked out by OZP (signature and deliver of marking out reports),
- workplace handover ("V" order, work permit),
- compliance with relevant safety regulations and fire protection regulations,
- method of excavation securing against fall of persons according to GD No. 591/2006 Coll.,

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- method of construction site securing against theft or damage of N4G's equipment (in particular protection of exposed fibre optic and metallic communication cables; permanent guarding can be requested if adequate protection cannot be provided),
- Binding schedule of works that will specify the terms for excavation and backfilling of excavations for pipes and cables. The schedule can be specified, negotiated, and approved individually within the framework of construction site handover,
- list of machines and equipment at the construction site,
- description of own excavation works (section 5.3.8 and 5.3.9),
- securing the excavation walls against collapse, excavation base adaptation,
- works connected with new construction, installation of crossing equipment, road, etc.,
- check of the installation of crossing facility, compliance with our conditions applicable to crossing, insulation check, possible repair of insulation,
- protection of N4G pipelines' and PTN cables' insulation – geotextile, sand packing, warning foil, pipeline backfilling with excavated material, arable soil spreading, see Section 5.3.12 .

Figure No. 1 Zones for excavation works relating to crossing of N4G's gas pipelines with line structures of external organizations:



5.3.8. Work procedure during pipeline stripping.

- Gas pipeline axis is marked out and approximate soil cover depth "k" is determined using underground networks locator, PTN cable routes, cathodic protection cable routes, and all networks of other organizations are marked out.
- Machine arable soil stripping "zone A1" (200-300 mm) in the area of future excavation is carried out if required in design documentation.
- Test pit A2 is excavated manually (spade, shovel, needle bar) to strip a part of the gas pipeline. Size of the test pit is chosen to securely verify the position and direction of the underground pipeline. When excavating the test pit, machine excavation of verified soil layer is allowed in zone "C",
- Excavation of soil along the gas pipeline in zone C is carried out by machine in layers parallel with the gas pipeline axis.

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- e) In zone B, soil excavation is always carried out manually using spade or shovel, etc.). Pneumatic hammers can be used for disintegration of harder soils below the pipeline; however, any damage to the gas equipment must be avoided.
- f) Parking and movement of any equipment over the gas pipeline axis is permitted only if the pipeline is covered by at least 500 mm of soil and provided that the soil has sufficient load bearing capacity. Equipment operator must not move full excavator shovel over exposed gas pipeline.
- g) If there is a risk of wheels sinking, the wheels or caterpillars have to be supported either by timber board or by other corresponding means. A sunk machine is not allowed to recover itself – it must be recovered by another machine standing outside of the gas pipeline axis. Equipment turning above the gas pipeline is strictly prohibited with the exception of slow equipment movement into working position. All machine works must be carried out to avoid damage to the pipeline in operation and/or its insulation.
- h) Machine operator must have a clear view in the direction of the works and the supervising person must be in his field of view. Whenever conditions require so, radio or loudspeaker telephone must be used as the connection between the supervising person and the machine operator.
- i) If the machine's longitudinal axis is situated perpendicularly to the pipeline, its distance from the pipeline must be such that the shovel in fully extended position does not reach the gas pipeline. Excavation works with mechanisms must be performed only in the direction away from the pipeline, not in the opposite direction.

5.3.9. Work procedure during proprietary telecommunication network (PTN) cables excavation

- a) Existing cable route is marked out using cable line detector (for example SEBA Dynatronic), at least 3 points will be marked out in the area of the crossing, further sections are marked out after every 10 - 20 meters as required.
- b) One test pit for exact verification of cable depth, its exact position and direction is excavated manually. Preferably, at least one test pit is placed in the site of the designed crossing and at least one test pit in places of change direction points.
- c) Machine arable soil stripping "zone A1" (200-300 mm) within the scope required by design documentation.
- d) Excavation of the cable may only be carried out manually within the distance of 0.5 m above, next to, and under the cable route. Machine excavation is permitted if the distance is greater than 0.5 m.
- e) Exposed cables must be secured against damage, theft, and change of position that might cause damage to them for the entire period of their exposure.

5.3.10. The excavation work carried out in parallel with cables VTS and PKO.

When excavations could endanger the cables in parallel by revealing, it is necessary to verify their exact position by test pits in relation to the planned route of the trench.

The number of needed test pits, unless otherwise agreed (eg. In the project documentation), specifies OZZ by agreement with OZZ according to the local situation. The decision shall be written down into the building log.

Revealing the entire length of the cable shall be carried out always when the distance between the trench wall and the cable is less than 0.5 meters.

The principle is that at first shall be the cables excavated and ensured against damage, after that excavation and final completion of the pipeline trench is performed.

5.3.11. Operator's (customer's) representative shall have the right and obligation to stop the works whenever he/she ascertains that the principles and conditions agreed for such works are not complied with or if he/she identifies circumstances threatening the operational safety.

5.3.12. Building excavations and ditches must be executed in accordance with relevant regulations, properly marked, and secured against fall of persons or soil collapse (method of excavation securing must be in accordance with Government Decree No. 591/2006 Coll., as amended). Security of excavation is within the responsibility of OZZ.

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5.3.13. Gas pipeline and PTN cables backfilling

- a) Before gas pipeline packing and backfilling, the contractor (supplier) shall be obliged to invite OZP to inspect the equipment for damage and to verify that the insulation of the entire exposed equipment corresponds to the provisions of Section 5.5. below. Before any PTN is backfilled, the contractor shall be obliged to invite OZP to perform its inspection. If an excavation is backfilled without operator's (customer's) consent, new excavation at the costs of the contractor (supplier) can be requested.
- b) Pipeline insulation protection is chosen according to the backfill soil type pursuant to TPG 920 21.
- c) Backfill soil types
 "a", "b" do not require any additional insulation protection,
 "c", "d" requires insulation wrapping with geotextile with minimum surface density of 1000 g/m²,
 "e", "f" require bedding and packing with sand 200 mm above the pipeline surface.
- d) The excavation is backfilled with excavated soil free of any stones larger than 200 mm and heavier than 15 kg. Backfilling will be performed evenly along both sides of the gas pipeline. It is prohibited to drop soil directly onto the pipeline.
- e) PTN cables are backfilled manually in the distance shorter than 0.5 m from the cable. First of all, it is necessary to fill-up the excavated hole to the level of approximately 100 mm under the HDPE pipe. Then the cable is packed with sand (or sieved soil with grain size below 8 mm) to the level of approximately 200 mm above and next to the cable. The backfill is covered with orange warning foil with black printed letters NET4GAS and with minimum overlap of 5 cm to each side from the HDPE edges. The excavation is then backfilled and leveled with excavated soil.

5.3.14. Packing and backfill compaction

- These operations are carried out at places where they are absolutely necessary, for example at the points of crossing with other networks, mainly with paved roads where risk of soil settlement and subsequent damage to the road exists. Degree of compaction and its verification is defined in design documentation.
- The compaction is only allowed for pipes with factory applied PE insulation that are provided by additional mechanical protection by geotextile (minimum surface density of 1000 g/m²) or pipes with cement protection of the insulation FZM-N. The pipeline must be further packed with sand or sieved soil (grain size below 8 mm) at least 200 mm above the pipe.
- No special requirements apply to compaction performed over gas pipeline placed in a pipe sleeve or protective pipe.
- Compaction is allowed only for backfill soil up to type "c" according to Table 1 pursuant to the provisions of TPG 920 21.
- Packing compaction in layers along the sides of the pipeline is possible only if the worker performing such compaction is not threatened by collapse of excavation walls and if the minimum width of work space between the pipe and excavation wall of 800 mm is observed.
- Compaction is carried out by vibration plates only.
- It is not possible to perform compacting on any pipes provided with asphalt or tape insulation! Conditions and possibilities of compaction have to be agreed individually for each case.

5.3.15. Concrete setting works with concrete mixer vehicles is possible, however, the nearest axle of the vehicle will be no less than 3 meters away from the edge of the underground pipeline.

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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 underground 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 work 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 TP_T01_01_01_05 Principles of 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-ed.2 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 on 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. 02. "B" order must be issued and signed by person with relevant qualification pursuant to the provisions of ČBÚ and ČÚBP Decree No. 50/1978 Coll., as amended.
 - b) "B" orders are recorded by an employee appointed by the head of the particular region.
 - 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

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.

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- 5.6.3. Rules for works, securing, and transfer of workplace on LV equipment in secure condition without voltage.
- 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 an 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.
 - 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.
 - 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.).
 - 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. 01 or Order "V", part I.
 - Before commencement with every work and after every interruption, the power-less condition has to be re-checked.
 - Works in the vicinity or in parallel with "HV" shall be fully subject to the provisions of ČSN EN 50110-1-ed-2.
 - 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.
 - 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.
 - Once the equipment commissioning procedure has commenced, the equipment must be considered live.
 - 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. The employee responsible for the electrical equipment can authorize contractor's representative with corresponding qualification to restore the power supply.
- 5.6.4. Conditions for works on electrical equipment in hazardous premises (space in which an explosive gaseous atmosphere is or can be present – see ČSN EN 60079-10-1).
- When working on electrical equipment in hazardous premises, "V" order (with part II) has to be issued.
 - When technology is in operation, it is prohibited to perform electrical measurement aimed at verification of electrical parameters of such electric equipment in hazardous premises. 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
 - 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.

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- 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-ed.2 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 region 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 are 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.

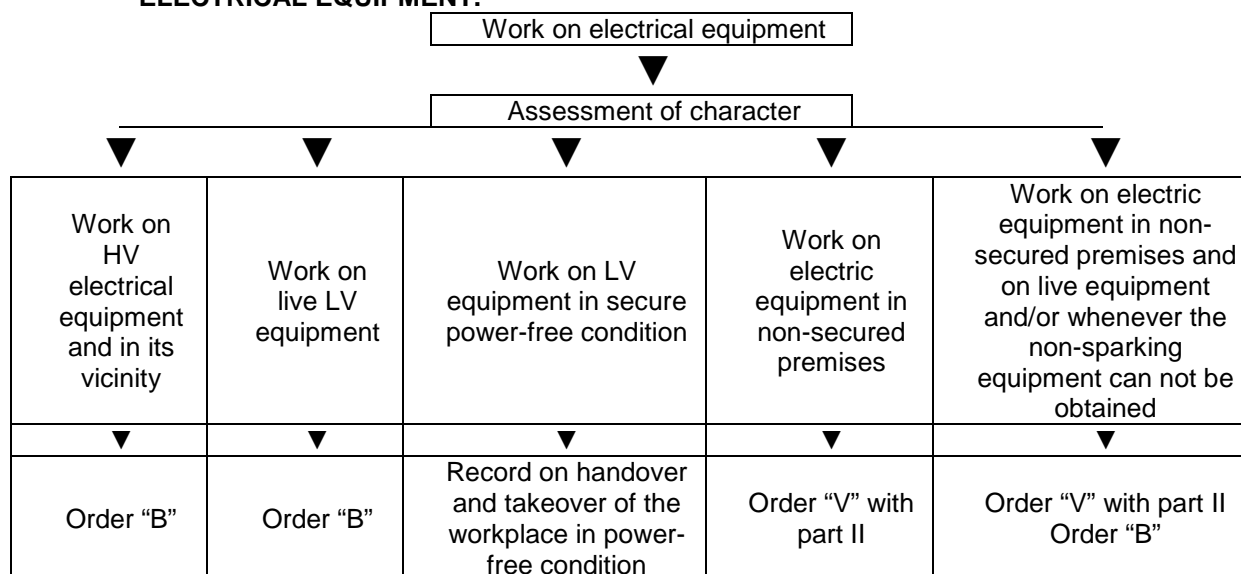
Before commencing with the works, the applicant or work manager must ensure issue of order "V" (with part II) and order "B" for employees performing immediate elimination of extraordinary faults in ZONE 2 on live equipment and/or when non-sparking equipment is unavailable. Furthermore, the applicant – 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 signaling 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 signaled) 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,

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- work manager will ensure compliance with safety measures and defined work 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/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 leaves the work area.
- d) The procedure in the event of flammable gas presence signaling / detector fault. Work manager or the employee appointed in the order “V” shall adopt the following measures whenever the first signaling limit (i.e., 10% of LEL) is reached or if equipment fault or low battery are signaled:
- 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 region or to the authorized employee. Provisions of Section 5.6.4. Work on Electrical Equipment shall fully apply.

5.7. SCHEME OF THE PROCESS FOR ASSESSMENT OF CHARACTER OF WORKS ON ELECTRICAL EQUIPMENT.



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

- 5.8.1. 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 shut-down and securing and which are performed without use of open fire (for example painting, fencing, lawn mowing, etc.) require issue of work procedure pursuant to 5.2.5 or work permit pursuant to the provisions of Annex No. 03. It is not necessary to issue order "V" for works with increased hazard.
- 5.8.2. 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) - Annex No. 04.

5.9. INSTRUCTIONS FOR WORKS IN ENVIRONMENTS WITH EXPLOSION HAZARD AND IN PROTECTIVE ZONE OF GAS PIPELINE

- 5.9.1. 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 Appendix No. 04.
- 5.9.2. 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.
- 5.9.3. 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 signaling 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 signaled) 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.

- 5.9.4. Interruption of the works and their re-starting in central areas must be reported by the works manager to the control room of relevant region.
- 5.9.5. Interruption of the works and their re-starting in central areas must be reported by the works manager to the control room of relevant region.
- 5.9.6. Connection between the workplace and the region's control room will be established by radio or by telephone - responsibility of the work manager.

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- 5.9.7. Order for works in environments with explosion hazard within the region or relevant equipment will 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".

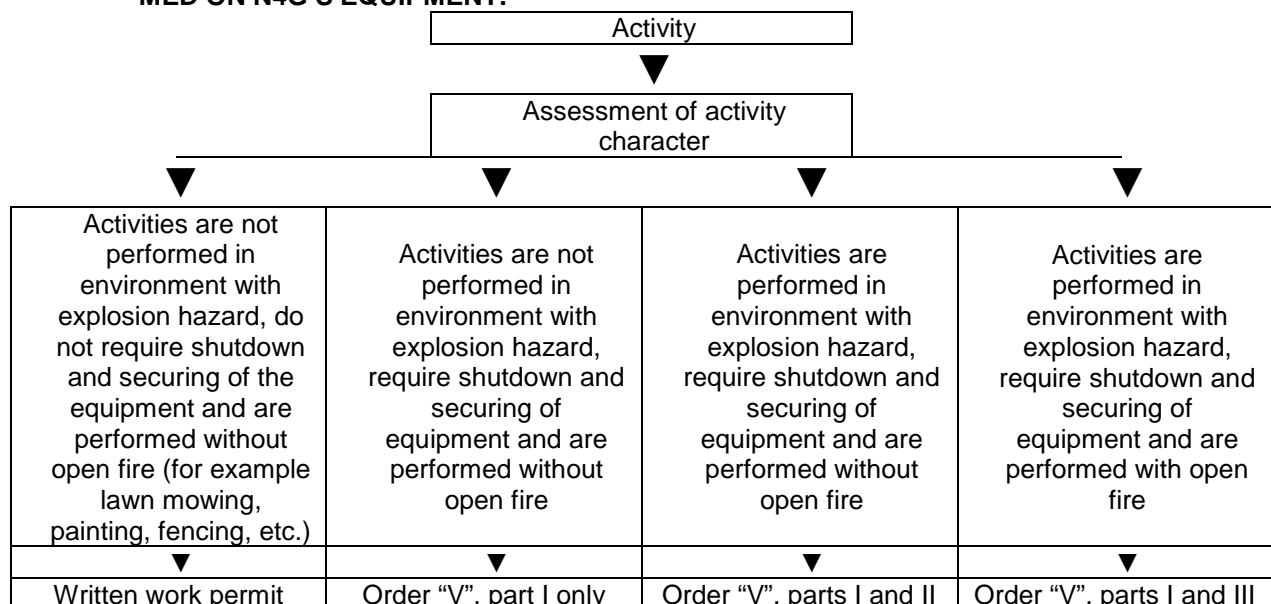
5.10. INSTRUCTIONS FOR WORK WITH OPEN FIRE

- 5.10.1. 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).
- 5.10.2. 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 does not apply to buildings where no gas technology is located, where there is no risk of hazardous concentrations of flammable liquid vapors and/or explosive mixtures of flammable dusts, as for example administrative buildings, garages, workshops, or other premises intended for and equipped as permanent welding workplaces, etc.
- 5.10.3. 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.
- 5.10.4. "V" order is issued by the operator (operating entity) on the groundwork of a requirement submitted by the responsible employee of the contractor. The order is valid for up to 120 hours provided that the location and the character of the performed work do not change.
- 5.10.5. The "V" order shall be issued on a special form – for specimen, see Appendix No. 4.
- 5.10.6. 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.
- 5.10.7. 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.
- 5.10.8. Exception in open fire usage are the objects 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 region. These premises and spaces will be designated with "Smoking permitted" and "Open fire usage permitted" signs.
- 5.10.9. Before any work with open fire is permitted, fire hazard at the workplace must be first assessed at all times, considering the location, space, object, or technology. Fire safety conditions and fire protection measures are determined by person qualified in the area of fire protection, technician or FP preventer, and/or any manager who passed the training of managers in the field of FP.
- 5.10.10. After completion of works with increased fire hazard, OZZ and OZP will confirm the work completion in writing into "V" order.
- 5.10.11. 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.
- 5.10.12. The fire protection assurance also comprises fire supervision required for safeguarding of performed works. The fire supervision can be performed by person professionally trained for the position of preventive fire watch member. Any contractor shall be either professionally trained by the client or the contractor shall provide the client with records proving their own professional training.

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- 5.10.13. 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.
- 5.10.14. 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 bolt joints tightness).
- 5.10.15. 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. 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's Welding Procedures, the work manager will interrupt the works with open fire or electric arc.
- 5.10.16. Interruption of the works and their re-starting in central areas must be reported by the works manager to the control room of relevant region.
- 5.10.17. 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.
- 5.10.18. This site inspection after the completion of the works must 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 signaling and at the same time with stable extinguishing equipment. If these premises are equipped with electronic fire signaling 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 signaling will be terminated. Fire supervision does not have to be performed at permanent welding workplaces intended and equipped for this purpose.

5.11. SCHEME OF THE PROCESS FOR ASSESSMENT OF CHARACTER OF WORKS PERFORMED ON N4G'S EQUIPMENT.



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6. REFERENCES

Act No. 133/1985 Coll.	on fire protection, as amended
Act No. 127/2005 Coll.	on electronic communications and on amendment to some other laws, as amended
Act No. 350/2011 Coll.	on chemical substances and chemical mixtures and on amendment to some other laws (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), as amended
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 labor inspection, as amended
Act No. 253/2005 Coll.	which amends certain acts in connection with adoption of the act on labor inspection, as amended
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 the 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 Decree No.48/1982 Coll., as amended by Decree No. 192/2005 Coll.,	defining basic requirements to ensure work safety and the safety of technical equipment, as amended
Ministry of Interior Decree No. 87/2000 Coll.	conditions of fire safety during welding and heating of bitumen in melting vessels, as amended
Ministry of Interior Decree No. 246/2001 Coll.,	on determining the requirements for fire safety a performance of state fire surveillance (regulation on fire prevention); as amended
ČSN EN 60079-29-1	Explosive atmospheres - Part 29-1: Gas detectors - functional requirements on flammable gas detectors
ČSN EN 60079-10	Electrical equipment for explosive gas atmospheres – Part 10: Determination of hazardous spaces;
ČSN ISO 3864 part 1-4	Graphic signs - safety colors and safety signs
Technical Rules TPG – G 905 01	Basic Safety Requirements for Operating Gas Facilities;

The above-mentioned list of legislative documents means the valid versions of these documents!

7. ANNEXES:

- No. 1 Record on handover and takeover of the workplace on electric equipment in power-free condition
- No. 2 Order “B”
- No. 3 Work permit for works not requiring equipment shutdown and securing
- No. 4 “V” order for execution of works with increased hazard