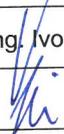


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A General Specification of Activities Performed by the Inspection Company

A.1 Required activities:

- **Technical supervision of the builder – pursuant to the provisions of Act No. 183/2006 Coll.**
- **Construction Supervisions , Inspection of Compliance with the Technological Work Procedures, Project Documentation and Technical Documentation**
- **Third party activities in conformity assessment,**
- **Expert activity**

A.2 Definitions

For the purposes of this Specification, the following terms are applied:

Client Is the common name used for the Client or Owner or Purchaser.
 Third Party: Is the independent, experienced and accredited expert/institute authorised by the responsible government.

Client's Supervisor of works Carries out all the jobs assigned to him by the Client by proxy or by contract, in the interest of the Client.

Technical supervision of the builder

A.3 Abbreviations

ISO	International Organisation for Standardisation
EN	European Standard
CSN	Czech Standards Institute
TPG	Technical Regulations- Gas
IEC	International Electrotechnical Commission
WPQ	Welding Procedure Qualification
WPQR	Welding Procedure Qualification Record
WPS	Welding Procedure Specification
NDT	Non-destructive testing
UT	Ultrasonic Testing
MT	Magnetic Testing
PT	Penetrant Testing
VT	Visual examination
RT	Radiographic Testing

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A.4 Place, Subject, and Term of Inspection Activities

The inspection activities on construction site will be carried out within the territory of the Czech Republic

Terms: 15.1. 2019-31.03.2020

Activities relating to technical inspection of materials – will be carried out on site on plant of construction company.

A.5 Construction Supervision Organisation

The Construction Supervision Organization is listed in the Annex:

- Inspection Organization LOT HSKA

B Scope of services

B.1 Technical Supervision of the Client -Investor

Technical supervision of the builder – pursuant to the provisions of Act No. 183/2006 Coll.

Required activities

Within the framework of technical supervision, the following is carried out in particular:

- becoming familiar with the supporting documents according to which the construction project is prepared - in particular becoming familiar with the project design documentation, content of agreements, and content of land and building permits,
- construction site (workplace) delivery to contractors and assurance of record into the construction (erection) log,
- takes part and represents the Client within the materials handover process between supplier and contractor at contractor's pipe yards and store premises (in case of materials ordered and purchased by Client)
- recorded delivery of the basic directional and elevation surveying of the construction to the contractor,
- participation in verification of terrain surveying by the contractor before commencement with the works,
- compliance with the conditions specified in the land and building permits and measures required by the state construction supervision during the period of construction execution,
- care of systematic completion of the documentation according to which the construction project is executed and recording the documentation relating to completed parts of the construction,
- check of completing documentation for trial operation, as built documentation, final operation permit documentation,
- negotiation about amendments and changes of the project which do not increase the costs of the building object or operating group, do not extend the period of construction, and do not impair the construction parameters,
- informing the Client about all serious matters regardless of their nature,

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- check of those parts of the supplies, which will be enclosed in the next steps, or which will become inaccessible; recording the inspection result into the construction log,
- in accordance with relevant agreements, delivering the prepared works to other contractors for their related activities,
- cooperation with personnel of the (general) designer performing author's supervision during assurance of compliance of executed supplies and works with the design,
- cooperation with (general) designer and with suppliers during execution or proposing of measures aimed at elimination of any possible design defects,
- monitors whether the contractors carry out the specified and agreed tests of materials, structures, and works, checks their results, and requests documents proving the quality of performed works and supplies (certificates, attestations, records, etc.),
- monitors keeping the construction and erection logs in accordance with the conditions specified in relevant agreements,
- raises any motions aimed at increasing the economy of future operation (use) of the completed construction,
- reporting of archaeological I pyrotechnical findings,
- cooperates with contractors' personnel during adoption of measures aimed at preventing or reducing damages whenever the construction is threatened by any natural disasters,
- checks advance of works with regard to the time schedule and provisions of individual agreements, informs the supplier about non-compliance with the terms, including preparation of supporting documents for property sanctions application,
- check of proper storage of materials, equipment, and structures,
- check construction, e.g. excavation, backfill, lowering-in of pipeline, concrete works etc., prepares supporting documents for final evaluation of construction during the course of the construction project,
- preparation of supporting documents for delivery and acceptance of the construction or its part(s) and participation in negotiations relating to delivery and acceptance,
- check of documents to be submitted by the contractor during delivery and acceptance of completed construction,
- check of elimination of any defects or arrears identified during acceptance in agreed terms,
- participation in final operation permit related proceedings,
- check of site clearance by the contractor,
- ensuring cooperation and work with responsible land surveyors.

B.1.1 Personnel Qualification:

Experience with Pipeline construction and knowledge of Czech Act No. 183/2006 Sb., as amended.

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B.2 Construction Supervisions , Inspection of Compliance with the Technological Work Procedures, Project Documentation and Technical Documentation

Specification (In Annex):

C4G-HSKA-ILF-GEN0B-NAK-MAN-920-004 Scope of Work for General Contractor
 Technical requirements NET4GAS
 C4G-JI73-ILF-GENER-BOZ-MAN-901-000 Requirements on HSE Management

B.2.1.1 Check of Stripping and Right-of-Way According to the Design

B.2.1.2 Earthworks Inspection

Specification (in Annex):

C4G-HSKA-ILF-GEN0B-STA-SPC-800-000 Earthworks Specification
 C4G-JI73-ILF-GENER-STA-SPC-801-000 Concrete Works-Specification

Excavation inspection

Check of geometry, sloping
 Soil type evaluation – grain size, stones
 Check of the bottom, compaction, presence of stones

Monitoring
 Monitoring
 Monitoring

Acceptance of Excavations

Physical check, check of the bottom, geometry.

Scope: 100 %

Check of bedding, packing

Scope: 100 %

Check of backfill, covering

Monitoring

B.2.1.3 Erection Inspection

Specification (in Annex):

C4G-HSKA-ILF-GEN0B-LIN-SPC-800-002 Construction Specification
 C4G-HSKA-ILF-GEN0B-STR-SPC-826-001 Painting and Coating Specification
 C4G-HSKA-ILF-PS02B-STR-SEZ-850-000 Tie-in Schedule
 C4G-HSKA-ILF-PS02B-STR-VYK-401-002 Piping Arrangement Drawing (new)
 C4G-HSKA-ILF-PS02B-STR-VYK-402-001 Piping Arrangement Drawing (Existing)
 C4G-HSKA-ILF-RU006-STR-SEZ-851-000 Tie-in Schedule
 C4G-HSKA-ILF-RU006-STR-VYK-401-001 Piping Arrangement Drawing
 C4G-HSKA-ILF-UP511-LIN-VYK-100-000 Alignment Sheet
 C4G-HSKA-ILF-UP512-LIN-VYK-110-000 Alignment Sheet
 C4G-JI73-ILF-GENER-LIN-SPC-800-001 Pipeline_Welding Specification
 C4G-JI73-ILF-GENER-STR-SPC-821-003-Welding_Specification
 C4G-JI73-ILF-GENER-STR-SPC-823-000 Piping Installation and Fabrication Specification
 C4G-JI73-ILF-GENER-STR-SPC-822-000 NDT SPECIFICATION

Inspection of transport and placement

Check of temporary storage
 Check of transport method –
 Check of loading – cranes

Monitoring
 Monitoring
 Monitoring

Erection Preparation

Beveling preparation – random
 Cleaning of ends – random
 Preheating check, including temperature measurement during welding
 Check of alignment – centralizer
 Check of welding electrodes, documentation inspection
 Check of electrodes drying
 Check of welders, documentation inspection

Monitoring
 Monitoring
 Monitoring
 Monitoring
 Monitoring
 Monitoring
 Scope: 100 %

Erection and Welding Inspection

Check of erection, bends, other components

Monitoring

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Check of welding parameters	Monitoring
Equipment condition check	Monitoring
Repairs check	Scope: 100 %
Visual Inspection of welds	Review
Check of continuously maintained documentation	Review
Check of designation, transfer of numbers	Monitoring
Inspection of geodesic surveying	Monitoring

B.2.1.4 NDT Inspection

Preparation inspection

Inspection of procedures	Scope: 100 %
Inspection of NDT personnel – certificates	Scope: 100 %
Check of equipment calibration, calibration plates	Scope: 100 %

Continuous inspections, verification

Check of US inspections documentation	Review
Check of X-ray and films	Review
Check of NDT documentation completeness in comparison with welds	Monitoring

B.2.1.5 Insulations Inspection

Preparation inspection

Inspection of insulation material – certificates and storage	Monitoring
Personnel qualification inspection	Scope: 100 %
Inspection of technical means	Monitoring

Insulation inspection

Sand blasting inspection	Monitoring
Preheating inspection	Monitoring
Inspection of insulation works execution	Monitoring
Insulation thickness inspection, visual inspection	Review
Adhesion inspection	0,1%

Inspection of pressure tests

Preparation inspection	Scope: 100 %
Stress test design inspection	Review
Equipment check	Scope: 100 %
Check of pressure chambers installation	Scope: 100 %
Inspection – management – tests, tests course	Review
Tests documentation inspection	Review
Inspection of the main pressure test	Review

Inspection of cleaning, drying, and calibration

Check of the quantity of impurities	Review
Calibration inspection – photographic documentation	Review
Drying check – dew point temperature	Review

Inspection of electrical installation, earthing

Inspection of cable installation	Monitoring
Tests of continuity and insulating condition of wires of installed cables	Monitoring
Inspection Supply and installation of power switchboards	Monitoring
Individual tests of connected electrical equipment	Monitoring
Inspection of default revisions to electro	Review
Inspection of ground conductor installation	Monitoring

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B.2.1.6 Documentation Inspection

Inspection of certificate and material documentation and its assignment on project
Review

Verification of completeness and correctness
Review

B.2.1.7 Professional Qualification of the Organization

- The supplier must document its experience with carrying out the activities of the main inspection authority on a project with similar scope – a project covering the construction and commissioning of a gas regulation station or a metering station. The project must cover at Least civil works, Works in the technological scope of i) a process piping (piping station), ii) Electrical and Instrumentation Works.

B.2.1.8 Personnel Qualification

Position –

Site Inspection Manager/TDI

experience with the implementation of inspection activities on a project with a similar focus and management of a team of inspectors, 5 years of inspection activities on gas pipelines and at least management of a team of inspectors on 2 projects with a similar focus

Mechanical Supervision

experience with the implementation of inspection activities on a project with a similar focus, Certificate RT -Level 2 according EN ISO 9712

EICT Supervision, Civil Supervision

experience with the implementation of inspection activities on a project with a similar focus

B.3 Third party activities in conformity assessment

B.3.1 Inspection Activities on materials

B.3.1.1 Inspection of materials:

- Ball Valves&Actuators
- Station material
- Scraper Units
- Line Bends
- Fittings

The Inspection will be provided on site or in the manufacturing premises of the contractor.

B.3.1.2 Professional Qualification of the Organization

- Notification on the groundwork of communication of the European Commission on inclusion into NANDO information system
 - Government Regulation No. 219/2016 Coll. (2014/68/EU) Pressure Equipment
 - Government Regulation No117/2016 Coll. (2014/30/ES) Electromagnetic Compatibility
 - Government Regulation No. 118/2016 Coll. (2014/35/ES) Electric Low Voltage Equipment

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B.3.2 Contractor's Readiness Inspection

Specification (In Annex)

C4G-HSKA-ILF-GEN0B-NAK-MAN-920-004 Scope of Work for General Contractor

C4G-JI73-ILF-GENER-BOZ-MAN-901-000 Requirements on HSE Management

B.3.2.1 Verification of Contractor's Personnel Qualification

Verified Contractor's Personnel:

- Revision technician – VHP gas equipment, pressure increase and reduction
- EWE / EWT
- Personnel for visual inspections VT – pursuant to the provisions of EN ISO 9712
- Operators of automated equipment
- Binders for each assembly group
- Land surveyors – agreement pursuant to technical requirements of NET4GAS
- Insulators – tests pursuant to the provisions of TPG or acknowledged by the certification firm
- Insulation inspectors pursuant to the provisions of TPG or acknowledged by the certification firm
- Head technician for stress test – experience with stress tests on DN over 900 and overall tested section lengths over 100 km
- Foremen with experience and certificates
- Site manager – authorized technician

B.3.2.2 Technical Means

Verified Contractor's Technical Means:

- Pipelayers
- Dozers
- Centralizers
- Welding automats
- Preheating equipment
- Cranes
- Equipment for soil sorting (screen) or crusher
- Welding aggregates
- Meters, tape meters, other length meters
- Pressure gauges, pressure sensors
- Equipment for measurements on welds
- Thermometers, temperature sensors

B.3.2.3 Professional Qualification of the Organization

Management systems certification authority pursuant to the provisions of ČSN EN/ISO 17021 in relevant scope of EN ISO 9001.

B.4 Expert activities

On request of NET4GAS provide expert consultation for inspectors and NET4GAS at a construction site in the scope of Annex SPR HSKA in specializations:

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Welding

Welding engineer - pursuant to EWF/EOTC (European Welding Federation/ European Organization for Testing and Certification) and IIW (International Institute of Welding) directives

NDT

NDT Expert, NDT personnel qualification:- for RT, UT, methods: Level 3 pursuant to SNT-TC-1A or pursuant to EN ISO 9712

Tests and Revision Procedure

- RGE revision technician within relevant scope (VHP) pursuant to the provisions of Regulation No. 21/1979 Coll. With minimum practice of: 5 years
- REE revision technician pursuant to the provisions of Regulation No. 73/2010 Coll. with minimum practice of 5 years
- RTE revision technician pursuant to the provisions of Regulation No. 18/1979 Coll. With minimum practice of: 5 years

Construction Process:

Authorized engineer – certificate about authorization by ČKAIT – Czech Chamber of Authorized Technicians in Civil Engineering pursuant to the provisions of Act No. 360/1992 Coll., on execution of job of authorized architects and on execution of job of authorized engineers and technicians active in civil engineering, as amended by Act No. 164/1993 Coll., Act No. 275/1994 Coll., and Act No. 224/2003 Coll. and Act No. 189/2008 Coll.

C Organizational Requirements

C.1.1 Minimum Scope of Human Resources Assurance

Document: Construction Management Organisation.

C.1.2 Required Information about Quality

- *Regular submission of reports*
Once a week – operative report about quality
Once a month – continuous report about quality
Final overall report about project quality
- *Information about main deviations in the area of quality*
- *Inspection reports from individual operations*
- *Verification of contractor's quality related documents and reports*

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C.1.3 Quality Verification Procedures for Individual Operations

The inspection company must present the procedures for verification of quality of the following operations to NET4GAS for approval:

- Earthworks
- Assembly and Welding
- NDT
- Pressure Tests
- Construction works

C.1.4 Project Quality Management Procedure

Inspection company must present organizational assurance of the project including qualification of individual inspectors as a part of its quotation.

C.1.5 Communication

Knowledge of Czech environment, communication with state authorities will be in Czech language. Communication with construction contractor(s) will take place in Czech language or in English.

P Annexes

- P.1 Technical requirements NET4GAS
- P.2 C4G-HSKA-ILF-GEN0B-LIN-SPC-800-002 Construction Specification
- P.3 C4G-HSKA-ILF-GEN0B-NAK-MAN-920-004 Scope of Work for General Contractor
- P.4 C4G-HSKA-ILF-GEN0B-STA-SPC-800-000 Earthworks Specification
- P.5 C4G-JI73-ILF-GENER-STR-SPC-822-000 NDT SPECIFICATION
- P.6 C4G-HSKA-ILF-GEN0B-STR-SPC-826-001 Painting and Coating Specification
- P.7 C4G-HSKA-ILF-PS02B-STR-SEZ-850-000 Tie-in Schedule
- P.8 C4G-HSKA-ILF-PS02B-STR-VYK-401-002 Piping Arrangement Drawing (new)
- P.9 C4G-HSKA-ILF-PS02B-STR-VYK-402-001 Piping Arrangement Drawing (Existing)
- P10 C4G-HSKA-ILF-RU006-STR-SEZ-851-000 Tie-in Schedule
- P11 C4G-HSKA-ILF-RU006-STR-VYK-401-001 Piping Arrangement Drawing
- P12 C4G-HSKA-ILF-UP511-LIN-VYK-100-000 Alignment Sheet
- P13 C4G-HSKA-ILF-UP512-LIN-VYK-110-000 Alignment Sheet
- P14 C4G-JI73-ILF-GENER-BOZ-MAN-901-000 Requirements on HSE Management
- P15 C4G-JI73-ILF-GENER-LIN-SPC-800-001 Pipeline_Welding Specification
- P16 C4G-JI73-ILF-GENER-STA-SPC-801-000 Concrete Works-Specification
- P17 C4G-JI73-ILF-GENER-STR-SPC-821-003-Welding_Specification
- P18 C4G-JI73-ILF-GENER-STR-SPC-823-000 Piping Installation and Fabrication Specification