



EVROPSKÁ UNIE
Fond soudržnosti
Operační program Životní prostředí



United Energy, a.s., 2 Teplárenská 434 03 Most-Komořany, Czech Republic

PROCUREMENT DOCUMENTS

FOR PUBLIC CONTRACT

Environmental Improvements on TKY II Heating Plant – Wet Desulfurization

Ref.no. Z2018-033521



Most-Komořany

1. 10. 2018



EVROPSKÁ UNIE
Fond soudržnosti
Operační program Životní prostředí

Contracting Authority



United Energy, a.s., 2 Teplárenská 434 03 Most-Komořany, Czech Republic

PROCUREMENT DOCUMENTS

in conformity with Section 28, Subs. 1-b, Act No. 134/2016, on Public Procurement

for Public Contract
Ref. no. Z2018-033521

Environmental Improvements on TKY II Heating Plant – Wet Desulfurization

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**Environmental Improvements on TKY II Heating
Plant - Wet Desulfurization**

PART 1

**REQUIREMENTS AND CONDITIONS ON REQUESTS TO
PARTICIPATE AND ON TENDERS, SPECIFICATION OF THE
PROCUREMENT PROCESS**

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A. INTRODUCTION

1. CONTRACTING AUTHORITY

1.1 Identification

Name: United Energy, a.s.

Registered address: 2 Teplárenská St., 434 03 Most-Komořany, Czech Republic

a company registered in Section B, File 1722 of the Business Registry of the Regional Court of Ústí nad Labem, Czech Republic

Business registration no.: 273 09 959

VAT no.: CZ27309959

Represented by: Ing. Milan Boháček, Deputy Chairman of the Board of Directors
Ing. Petr Mareš, Director

Procurement profile: <http://www.e-zakazky.cz/Profil-Zadavatele/afad761b-b55c-43d9-93f5-060173e5fd3c>

1.2 Correspondence address

All communication between the Contracting Authority and tender participants related to this procurement process should be sent to:

United Energy, a.s.

2 Teplárenská St., 434 03 Most-Komořany, Czech Republic

1.3 Contracting Authority contact person

Ing. Jaromír Kneifl

Head of Procurement and Contract Affairs

E-mail: jaromir.kneifl@ue.cz

Deputy:

Vladimír Hynes

Procurement and Sales Specialist

E-mail: vladimir.hynes@ue.cz

1.4 The contact(s) listed above shall be in charge of communication between the Contracting Authority and tender participants.

1.5 All correspondence between tender participants and the Contracting Authority must be marked with the tender name: Environmental Improvements on TKY II Heating Plant - Wet Desulfurization.

1.6 Submission of Request to Participate, Indicative Tenders and Tenders shall be in accordance with Section 211, Subs. 3 and Section 28, Subs.1-i of Act No. 134/2016 Coll. done electronically, via an electronic tool ("the profile of the Contracting Authority) at the electronic address <http://www.e-zakazky.cz/Profil-Zadavatele/afad761b-b55c-43d9-93f5-060173e5fd3c>, which fulfills the conditions of Section 213 of Act No. 134/2016 Coll. Pursuant to Section 211, Subs. 4 of Act No. 134/2016 Coll., On Public Procurement, as amended, the Contracting Authority informs Participants that the technical information necessary for the electronic submission of Request to Participate, Indicative Tenders and Tenders is listed on the website of the electronic tool.

2. PROCUREMENT

- 2.1 The Environmental Improvements on TKY II Heating Plant - Wet Desulfurization tender is an Above-Threshold Public Contract as defined in Section 151, Subsection 2 of Act No. 134/2016 on Public Procurement (hereinafter, the “Public Procurement Act” or “PPA”); the Tender is a Negotiated Procedure with Prior Publication as described in Section 3-d of the PPA.
- 2.2 The Contracting Authority expects the Environmental Improvements on TKY II Heating Plant - Wet Desulfurization tender to be realized with financial support of the European Union, as part of the European Structural Funds’ Operational Programme Environment (OPE), in accordance with the OPE Public Tender Guidelines 2014 – 2020 current as of the date of publication of the Contract Notice in the Public Tenders Bulletin.

3. TERMS AND DEFINITIONS

- 3.1 For the purposes of this Procurement, the following term definitions apply:
- 3.1.1 Economic Operator: a legal entity as described in Section 5 of the PPA.
- 3.1.2 Notice: A Contract Notice published in the Public Tenders Bulletin pursuant to Section 212, Subs. 3-b of the PPA, declaring the Contracting Authority’s intention to hold a public tender pursuant to the PPA.
- 3.1.3 Request to Participate: As defined in Section 28, Subs. 1-d of the PPA; consists of information and documents demonstrating the Economic Operator’s qualifications and is submitted to the Contracting Authority in writing based on the Procurement Documents.
- 3.1.4 Indicative Tender: As defined in Section 28, Subs. 1-e of the PPA; consists of information and documents submitted in writing to the Contracting Authority; based on Procurement Documents and the Contracting Authority’s invitation pursuant to Section 61, Subs. 5 of the PPA; submitted in writing pursuant to Section 107 of the PPA.
- 3.1.5 Tender: As defined in Section 28, Subs. 1-f of the PPA; consists of information and documents submitted in writing to the Contracting Authority; based on Procurement Documents, the Contracting Authority’s invitation, and results of indicative tender negotiations pursuant to Section 61, Subs. 11 of the PPA; submitted in writing pursuant to Section 107 of the PPA.
- 3.1.6 Time Limit for the Submission of Requests to Participate: the deadline set by the Contracting Authority pursuant to Section 62, Subs. 1 of the PPA for submission of Requests to Participate.
- 3.1.7 Time Limit for the Submission of Indicative Tenders: the deadline set by the Contracting Authority pursuant to Section 62, Subs. 2 of the PPA for submission of Indicative Tenders by invited participants, pursuant to Section 61, Subs. 5 PPA.
- 3.1.8 Time Limit for the Submission of Tenders: the deadline set by the Contracting Authority pursuant to Section 62, Subs. 4 of the PPA for submission of Tenders by participants invited to do so pursuant to Section 61, Subs. 11 of the PPA.
- 3.1.9 Participant: As defined in Section 47, Subs. 1, PPA; an Economic Operator that submitted a Request to Participate.
- 3.1.10 Procurement Documents: a set of documents providing the information required to prepare (Indicative) Tenders, pursuant to Section 28, Subs. 1-b, PPA.
- 3.1.11 Award period: a period selected by the Contracting Authority pursuant to Section 40, Subs. 1, PPA, during which Participants may not quit the Tender.

- 3.1.12 Selected Economic Operator: As defined in Section 28, Subs. 1-h, PPA; the Participant selected by the Contracting Authority in the Tender.
- 3.1.13 Contracting Authority: A company fulfilling the conditions of Section 4, Subs. 2 and 3, PPA. For this Tender, the Contracting Authority is: United Energy, a.s., Most-Komořany, 2 Teplárenská St., PSČ: 434 03, Business registration n (IČ): 273 09 959.
- 3.1.14 Procurement: in these Procurement Documents, the Procurement is the construction public procurement “Environmental Improvements on TKY II Heating Plant - Wet Desulfurization”.
- 3.1.15 PPA: hereinafter, always the Public Procurement Act; i.e., Act No. 134/2016, on Public Procurement, as amended.
- 3.2 Throughout the Procurement Documents, unless stated otherwise, the following term sets are equivalent: Procurement – Work; Contracting Authority – Purchaser; Participant – Economic Operator – Contractor.
- 3.3 Further term definitions relevant for Tenders may be found in Parts 2 and 3 of the Procurement Documents.

4. SUBJECT OF PROCUREMENT

- 4.1 The subject of the Environmental Improvements on TKY II Heating Plant - Wet Desulfurization Public Contract is a functional Work consisting of the delivery of all Goods, Works, and Services related to the construction of a flue gas treatment system as specified in the Procurement Documents; principally, this shall mean the replacement of an existing dry flue-gas desulfurization system for the solid-fuel boilers “K6” through “K10” located at the Purchaser’s premises with a wet flue-gas desulfurization system, including a new absorber.
- 4.2 Technical requirements are specified in accordance with Section 89 and 92, PPA, as requirements on performance and function, together with descriptions of purpose or goals to be met.
- 4.3 The Work is envisioned as a “turnkey” project, and should contain all deliveries of related Goods, Works, and Services. The Work is to be a result of construction and assembly activities and related design and engineering work, and should be capable of independently performing a given economic and / or technical function once completed.
- 4.4 For a detailed specification of the subject of this Procurement, including completion deadlines, quality, technical parameters, type and quantity of Goods, Works, and Services required, and standards expected to be followed, see Parts 2 through 4 of these Procurement Documents.
- 4.5 Procurement subject classification (CPV)

The Purchaser has, as part of the Contract Notice, classified the subject of this Procurement in line with the reference categories provided for public procurements, as follows:

- 45253200-7 – Construction of desulfurization systems
- 45220000-5 – Design and construction work
- 45251000-1 – Construction of power and heating plants
- 51100000-3 – Installation and assembly of electrical and mechanical systems
- 71320000-7 – Technical design work

5. TIME AND PLACE OF CONTRACT EXECUTION

- 5.1 The subject of this Procurement should be realized in the timeframe provided in Subsection 10.1 of the draft Contract that is a part of Part 2 (Terms and Conditions) of these Procurement Documents.
- 5.2 The place of execution for “Environmental Improvements on TKY II Heating Plant - Wet Desulfurization” shall be the premises of United Energy a.s., located in Czech Land Register district no. 668893 – Komořany u Mostu, Most – Komořany, Ústí nad Labem Region, Czech Republic. For detailed specification, see Part 3 of these Procurement Documents.
- 5.3 The Purchaser expects the procurement process to conclude and the Contract to commence by May 31, 2019. If the procurement process, and therefore the commencement of Contract execution, is delayed by more than fourteen (14) calendar days from the date above, then the Contract between the Purchaser and the selected Contractor, which in any event will be signed immediately after the PPA’s pre-signing conditions have been met, will be updated as regards deadlines to reflect the delay in Contract execution commencement due to delays in the procurement process.

6. PROCUREMENT PROCESS LANGUAGE

- 6.1 All communication and negotiations between the Purchaser and Participants regarding the procurement process, as well as the Request to Participate, the Indicative Tender, and the Tender, will be conducted / written exclusively in the Czech language.

7. PURCHASER’S RESERVED RIGHTS

- 7.1 The Purchaser reserves the right not to return submitted tender documentation.
- 7.2 Pursuant to Section 170, PPA, the Purchaser reserves the right to terminate the procurement process for cause or in any of the cases given in Section 127, PPA.
- 7.3 Pursuant to Section 39, Subs. 5, PPA, the Purchaser reserves the right to verify with third parties the information found in Tenders.

8. TENDER COSTS

- 8.1 All costs related to the drafting and submission of Requests to Participate, Indicative Tenders, and Tenders for this Procurement shall be borne exclusively by the tendering Participant; the Purchaser shall accept no responsibility for such costs, regardless of the circumstances or result of the procurement process, excepting cases listed in Section 40, Subs. 4, PPA.

B. PROCUREMENT DOCUMENTS

9. CONTENTS

9.1 The Procurement Documents consist of:

Part 1 – Requirements and Conditions on Requests to Participate and Tenders and Specification of the Procurement Process

Part 2 – Terms and Conditions

Part 3 – Technical Requirements

Part 4 – Forms and Detailed Instructions for Requests to Participate and Tenders

9.2 Pursuant to Section 36, Subs. 4, PPA, the Purchaser hereby discloses that the Procurement Documents have been prepared by E-CONSULT, s.r.o., a Czech limited liability company with registered address 445/212 Sokolovská, Prague, Czech Republic, business registration no. 45801738, on the basis of the Purchaser's requirements and source data.

The Purchaser's source materials included the documentation required for Czech Office of Construction approval. This documentation had been prepared by Tractebel Engineering a.s., a Czech joint stock company, business registration no. 15049451 and is now appended to Part 3 of these Procurement Documents (Supplement 1 – Purchaser's Technical Requirements on the Work).

The conditions and requirements for the electronic bidding process have been prepared by NAR marketing s.r.o., a Czech limited liability company with registered address 33 Masarykovo náměstí, 702 00 Ostrava, Czech Republic, business registration no. 64616398. The Purchaser selected the evaluation criteria, including weighting, as well as the length of a bidding round, round extension periods, minimum and maximum bid increments, and information displayed to participants. The Purchaser also set the deadline for the electronic signing of the final protocol.

9.3 The text and factual contents of the Procurement Documents, as well as all other related information and documents, are Confidential Information as defined in Section 1730, Subs. 2 of Act No. 89/2012 – the Civil Code, as amended; Participants are only allowed to use this information and documents in relation to this particular Public Contract.

9.4 The Award Criteria published in these Procurement Documents may be changed or amended by the Purchaser pursuant to Section 99, PPA.

9.5 The Purchaser shall not be held liable for any errors, omissions, and irregularities that may occur in Requests to Participate and (Indicative) Tenders if those errors, omissions, or irregularities are the result of the Participant's incorrect interpretation of the Procurement Documents.

9.6 This English translation of the Procurement Documents is provided for information purposes only; in the event of doubt or conflict, the original Czech text shall prevail.

10. AVAILABILITY OF PROCUREMENT DOCUMENTS

10.1 Pursuant to Section 96, Subs. 1, PPA, these Procurement Documents have been published in the Purchaser's profile at <http://www.e-zakazky.cz/Profil-Zadavatele/afad761b-b55c-43d9-93f5-060173e5fd3c>.

11. EXPLANATIONS AND CLARIFICATIONS TO PROCUREMENT DOCUMENTS

- 11.1 The Purchaser may provide explanations and clarifications to the Procurement Documents via publication of these and any other related documents at its online profile, as specified in Section 98, Subs. 1-a, PPA.
- 11.2 Participants may request explanations and clarifications to the Procurement Documents in writing, by electronic mail sent to the Purchaser's representative listed in Section 1.3 above. All such requests need to be delivered in accordance with the provisions of Section 98, Subs. 3, PPA. (Chiefly, this means requests need to be delivered no later than 8 business days before the Request to Participate / Indicative Tender / Tender deadline.) Requests made by telephone or orally in person, as well as requests in any form made in any language other than the Czech language, will be ignored and considered non-existent by the Purchaser.
- 11.3 The Purchaser's explanations and clarifications to the Procurement Documents, including the verbatim text of the associated request made pursuant to Section 11.2 above, but excluding any identification of the request's author, will be published no later than three (3) business days from receipt of the request made pursuant to Section 11.2 above.
- 11.4 Participants requesting explanations and clarifications are hereby advised to send the request (and its attachments, if any) in a format allowing, at minimum, copy-paste operations on the text, or else accompanied by a digital copy (scan) if sent printed. The Purchaser asks this in order to minimize the time needed to process and respond to requests.

12. INSPECTION OF WORK SITE

- 12.1 Pursuant to Section 97, PPA, the Purchaser will allow Participants to inspect the Site where the Contract is to be performed, so that Participants may gain a better understanding of the relevant local conditions.
- 12.2 The Purchaser will organize Participant inspection tours in a period specified in the Invitation to Submit Indicative Tenders and pursuant to Section 18.1 below; further details will be agreed with the Purchaser's contact representative listed in Section 1.3 above.
- 12.3 The Purchaser will allow individual Participants, upon the Participant's request, to inspect the Site at a mutually-agreed time within the period specified as in Section 12.2 above. Participants may decline as inconvenient no more than 2 different proposed inspection dates.
- 12.4 Inspection tours will be held exclusively in the Czech language; Participants who require it are advised to secure interpreting services beforehand.
- 12.5 Participants will be required to observe any instructions and limitations imposed on site by the Purchaser's representative conducting the inspection tour. Participants and / or their individual representatives shall be held liable for any and all risks, losses, damages, injuries, and expenses, however these come about, that may result from their participation in the inspection tour.
- 12.6 Participant representatives are free to ask any questions they consider pertinent during the inspection tour; however, any answers given to such questions by the Purchaser's representative should be considered to be for information purposes only, and explicitly do not constitute an explanation or clarification to the Procurement Documents in the sense discussed in Section 11 above, nor should they be considered a binding step in the procurement process. If a Participant identifies points of confusion to which they feel explanation or clarification is required, they will need to request such explanation or clarification through the process discussed in Section 11.2 above.



PROCUREMENT DOCUMENTS
Environmental Improvements on TKY II Heating Plant - Wet Desulfurization

PART 1
REQUIREMENTS AND CONDITIONS ON REQUESTS TO PARTICIPATE AND
TENDERS AND SPECIFICATION OF THE PROCUREMENT PROCESS

- 12.7 For practical reasons, each Participant shall be limited to sending no more than 8 representatives on the inspection tour. All individual Participant representatives will be asked to sign on a name roll that will then be appended to the inspection tour protocol.

C. REQUEST TO PARTICIPATE

13. REQUEST TO PARTICIPATE

- 13.1 Pursuant to the Notice of Opening of the Procedure by the means of which the Purchaser invites an unlimited number of participants to submit their Request to Participate in the Procedure, pursuant to Section 61, Subs. 1, PPA and this Procurement Documents, the Participants submits to the Purchaser the Request to participate; specific conditions and scope required by the Purchaser for Requests to Participate are given below, pursuant to Section 37, Subs. 2, PPA.
- 13.2 Requests to Participate will need to demonstrate that the Participant meets the qualification criteria specified in Section 14 below.

14. QUALIFICATION CRITERIA

- 14.1 To qualify for this procurement process, interested Participants need to meet the qualification criteria. Participants qualify by proving:
- a) Basic competence, as defined in Subsection 14.1.1 below;
 - b) Professional competence, as defined in Subsection 14.1.2 below;
 - c) Economic qualification, as defined in Subsection 14.1.3 below, and
 - d) Technical qualification, as defined in Subsection 14.1.4.
- 14.1.1 Qualifying for basic competence in the Czech Republic, pursuant to Section 74, PPA, requires the Participant to submit documents required by Section 75, PPA, i.e.:
- a) Statement of Criminal Register, pursuant to Section 74, Subsection 1-a, PPA, in the scope defined in Section 74, Subsection 2, PPA, and Section 74, Subsection 3, PPA
 - b) Attestation from the Czech Tax Administration, pursuant to Section 74, Subsection 1-b, PPA
 - c) Written affidavit on consumption tax, pursuant to Section 74, Subsection 1-b, PPA
 - d) Written affidavit pursuant to Section 74, Subsection 1-c, PPA
 - e) Attestation from the Czech Social Security Service, pursuant to Section 74, Subsection 1-d, PPA
 - f) Transcript of their entry in the Commercial Register, or written affidavit if not entered in the Register, pursuant to Section 74, Subsection 1-e, PPA
- 14.1.2 Qualifying for professional competence in the Czech Republic, pursuant to item III.1.1 of the Contract Notice, to Section 77, Subsection 1, PPA, and to Section 77, Subsection 2, PPA, requires the Participant to submit documents as follows:
- a) Transcript of their entry in the Commercial Register or a similar registry, if maintaining an entry there is required by other legislation
 - b) Certificate of authorization to do business in the areas relevant to this Public Contract, including, but not limited to the categories of: Construction Design; Construction, Rebuilding, and Demolitions; Assembly, Repair, Inspection, and Testing of Pressure Systems and Pressure Bottles; Assembly, Repair, Inspection, and Testing of Electrical Equipment
 - c) Documents certifying the professional competence of the Participant or any entity the Participant will employ to ensure professional competence, minimum scope as follows:

- Authorized Technician – Land Construction certification pursuant to Section 5, Subs. 3-a of Act No. 360/1992 on Authorized Architects and Authorized Technicians in the Construction Industry. The Participant should demonstrate this qualification by submitting certificates issued by the relevant authority (i.e. Czech Chamber of Authorized Engineers and Techniques in the Construction/ČKAIT), and
- Authorized Technician – Technological Devices certification pursuant to Section 5, Subs. 3-e of Act No. 360/1992 on Authorized Architects and Authorized Technicians in the Construction Industry. The Participant should demonstrate this qualification by submitting certificates issued by the relevant authority (i.e., ČKAIT).

14.1.3 Qualifying for economic competence pursuant to item III.1.2 of the Notice of Opening of the Procedure, and to Section 78, PPA, requires the Participant to submit documents as follows:

- a) Profit and loss statement, or equivalent statement as required by the legislation of the Participant's place of incorporation, for the last three accounting periods, or for all accounting periods if the Participant entity was created later than three periods ago; a minimum annual turnover of CZK 100 million is required.

If the Participant will be demonstrating economic competence by statements in another currency, the Purchaser will convert the Participant's stated turnover using the exchange rate quoted by the Czech National Bank for the final day of the Request to Participate submission period, as defined in Section 16 below.

14.1.4 Qualifying for economic competence, pursuant to item III.1.3 of the Notice of Opening of the Procedure, and to Section 79, PPA, requires the Participant to submit documents as follows:

- a) A list of construction projects completed by the Participant in the 12 years (in the interest of assuring adequate competitiveness standards) before the start of this procurement process; over this period, the Participant will need to have duly completed at least one project matching any one of the descriptions given in points (i), (ii), (iii), and (iv) below:
 - i) Manufacture and realization as principal supplier of a flue-gas desulfurization project using the wet lime scrubbing method, with a minimum volume of desulfurized gas of 400,000 Nm³/h,
 - ii) Manufacture and realization through a third party of a flue-gas desulfurization project using the wet lime scrubbing method, with a minimum volume of desulfurized gas of 400,000 Nm³/h
 - iii) Realization as principal supplier of a flue-gas desulfurization project using the wet lime scrubbing method, with a minimum volume of desulfurized gas of 400,000 Nm³/h
 - iv) Realization as subcontractor of complete main system delivery for a flue-gas desulfurization project using the wet lime scrubbing method, with a minimum volume of desulfurized gas of 400,000 Nm³/h

The wet lime scrubbing method is the capture of acidic compounds in flue gasses (particularly, SO₂) by absorption in water or a water solution using lime or lime hydrate.

A minimum of one completed project that meets any of the criteria given in (i), (ii), (iii), and (iv) above suffices to satisfy point (a) of the technical qualification requirements.

Participants will need to use the 12-year project list template provided in Part 4 of the Project Documentation.

- b) Clients' attestation of order fulfillment for projects listed in the Project List required by Section 14.1.4-a above, including identification of the project, price, time and place of realization, and a confirmation of due and technically correct completion. Due completion is defined in Section 1914 *et seq.* of Act No. 89/2012, as amended.

When justified pursuant to Section 45, Subs. 2, PPA, the Participant may substitute the client attestation with an affidavit listing all data required for the client attestation. In case of doubt, the Purchaser reserves the right to refuse to accept the Participant's affidavit as a substitute, and to require the Participant to instead supply an attestation proper.

- c) The list of construction projects completed by the Participant for the last 12 years according to Section 14.1.4-a and the Clients' attestation according to Section 14.1.4-b can be replaced by the documents in accordance with Section 79, Subs. 5 of Act No. 134/2016 Coll.. However, these documents must contain all the information required by Section 14.1.4-a and 14.1.4-b above and clearly demonstrate the fulfillment of technical qualification required by the Contracting Authority.

- 14.2 If such qualifications were earned abroad, they are to be demonstrated by documents issued pursuant to the legislation of the respective country, but in the scope required by the Purchaser and in accordance with the requirements of Section 45, Subs. 3, PPA.

- 14.3 In the event of multiple Participants co-tendering, pursuant to Section 82, PPA, basic competence as defined in Section 14.1.1 above and professional competence as defined in Section 14.1.2-a above are to be demonstrated by each co-Participant individually.

In the event of a co-tender, the co-Participants are required by Section 103, Subs. 1-f, PPA, to submit, along with documentation of the qualification criteria given above, an agreement including an obligation binding upon all co-tenderers to bear joint and several liability for any and all legal arrangements with the Purchaser and any third parties, throughout the whole realization period of this Public Contract and, if later, as long as any other obligation arising from the Contract exists.

- 14.4 Proof of qualification criteria compliance through other parties pursuant to Section 83, PPA:

- 14.4.1 Part of the economic, technical, and professional competence of the Participant, excluding the criterion given in Section 14.1.2-a above, may be proved through other persons. In such case, the Participant has to submit the following documents:

- a) Documents proving the professional competence of the other person pursuant to Section 77, Subs. 1, PPA
- b) Documents proving that the other person fulfills the criteria not fulfilled by the Participant itself
- c) Documents proving the basic competence of the other person pursuant to Section 74, PPA
- d) A written, binding agreement of that other person to provide their services for the benefit of this Public Contract or to provide the Participant with goods or rights for use in the latter's fulfillment of the same; this, at minimum, in a scope corresponding to the extent to which the other person assumed the Participant's obligation to prove his qualifications.

- 14.4.2 The requirement pursuant the Section 14.4.1-d above will be considered fulfilled if the other party's written statement contains an obligation of joint and several responsibility with the Participant in relation to this Public Contract.

However, if the Participant is proving the qualifications and submitting the documents pursuant to Section 14.1.4-a above through another person, that other party's statement pursuant to Section 14.4.1-d above must contain a provision to the effect that the other

- person will be the one to execute the works or provide the services covered by the qualification criterion assumed by the other party.
- 14.4.3 In case of proving the economic competence through another person, the Purchaser, pursuant to Section 83, Subs. 3, PPA, requires that the Participant and that other person, who is to demonstrate economic competence pursuant to Section 78, PPA, bear joint and several liability for their obligations under this Public Contract.
- 14.5 Pursuant to Section 86, Subs. 5, PPA, documents proving Basic Competence as described in Section 14.1.1 above, and Professional Competence as described in Section 14.1.2-a above, must show that this criterion had been met no later than 3 months before the start date of this procurement process, the start date being the day the Purchaser posted the Notice to the Public Tenders Bulletin, as discussed in Section 3.1.2 above
- 14.6 Unless the PPA or the Purchaser's Procurement Documents require otherwise, then pursuant to Section 45, Subs. 1, PPA, the Participant should submit copies, not originals, of the documents in question.
- 14.7 Unless these Procurement Documents specify otherwise, the Participant is not entitled to substitute an affidavit for the required documents as provided for in Section 86, Subs. 2, PPA. The Participant may, however, always substitute a standardized European attestation for the required documents, pursuant to Section 87, PPA.
- 14.8 The Participant may substitute a transcript from the Qualified Suppliers Database for the documents required to demonstrate Basic Competence by Section 74, PPA, and those required to demonstrate Professional Competence by Section 77, PPA; this only to the extent to which such a transcript demonstrates Professional Competence criteria have been met. The transcript may not be older than 3 months as of the last day of the period allowed to demonstrate Basic or Professional Competence. The Participant may also demonstrate its qualifications by a valid certificate from the Certified Suppliers System pursuant to Section 233 *et seq.*, PPA.
- 14.9 If there appears a change in the Participant's relevant qualifications when the qualification documents had already been submitted, the Participant must proceed as specified in Section 88, PPA.
15. REQUEST TO PARTICIPATE FORM, FORMAT, AND SIGNATURES
- 15.1 Participants are required by Section 37, Subs. 2, PPA, to submit Requests to Participate as follows:
- 15.1.1 In writing, in the Czech language; the writing should be unambiguous, free of insertions, corrections, and other potentially confusing elements and shall be submitted in the secure format *.pdf to the Contracting Authority within the Time Limit for the Submission of Requests to Participate.
- 15.1.2 The Request to Participate must include the date and must be electronically signed and, if the Participant is a corporation, must be signed by an authorized signatory for the company, particulars to match the entry in the Commercial Register. The authorized signatory may empower a representative to sign on its behalf, in which case the Participant will need to include a Power of Attorney to that effect with the Request to Participate; if the Participant is a natural person, they may instruct an authorized representative to sign on their behalf.
- 15.2 For detailed requirements and information on the contents and presentation of Requests to Participate, see Part 4 of the Procurement Documents, "Forms and Detailed Instructions for Requests to Participate and Tenders".



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16. TIME LIMIT AND MANNER OF SUBMISSION OF REQUESTS TO PARTICIPATE
- 16.1 Request to Participate, along with documents proving the Participant's fulfillment of the qualification criteria (hereinafter jointly, "Request to Participate") shall be submitted to the Contracting Authority electronically through electronic tool according to Section 1.6 above so that it is delivered no later than by the end of the Time Limit for the Submission of Request to Participate, i.e., no later than 12:00 (noon) local time on **November 2, 2018**.
- 16.2 If the Request to Participate is not submitted within the time limit and in the manner specified in Section 16.1 above, the Request to Participate shall be considered non-existent and shall thereafter be ignored.
17. ASSESSMENT OF REQUESTS TO PARTICIPATE
- 17.1 Once the Time Limit for the Submission of Requests to Participate has expired, the Purchaser shall assess the match between Participants' qualifications and its requirements as stated in the Procurement Documents, pursuant to Section 61, Subs. 5, PPA.
- 17.2 In the interest of a successful procurement process, the Purchaser may, pursuant to Section 46, PPA, request Participants to supply, upon the Purchaser's request and within a reasonable time frame, clarification of the information and documents submitted and / or submission of missing information or documents.
- 17.3 If a Participant fails to meet the Purchaser's qualification criteria to the extent listed in the Procurement Documents and any clarifications / additional submissions pursuant to Section 46, PPA, and Section 17.2 hereof, above, fail to rectify the situation, then the Purchaser shall proceed pursuant to Section 48, PPA, and Section 61, Subs. 5, PPA.
18. INVITATION TO SUBMIT INDICATIVE TENDERS
- 18.1 Pursuant to Section 61, Subs. 5, PPA, the Purchaser shall invite to submit indicative tenders all Participants having met the qualification criteria as specified in these Procurement Documents.

D. INDICATIVE TENDER

19. TENDER PRICE REQUIREMENTS

- 19.1 The Purchaser requires Participants to tender a fixed total price, denominated in CZK, exclusive of VAT.
- 19.2 The Tender Price shall be written out in components as required by these Procurement Documents.
- 19.3 For further information on the contents and presentation of the Tender Price, see Parts 2 and 4 of these Procurement Documents.

20. VARIANT TENDERS

- 20.1 The Purchaser shall not allow the tendering of variant proposals for the Public Contract (Tender Variants).

21. INDICATIVE TENDER FORM, FORMAT, AND SIGNATURES

- 21.1 Pursuant to Section 61, Subs. 6, PPA, only those procurement process Participants may submit Indicative Tenders who have been invited by the Purchaser to do so.
- 21.2 Pursuant to Section 107, Subs. 3, PPA, each Participant may submit only one Indicative Tender. Pursuant to Section 107, Subs. 4, PPA, Participants submitting Indicative Tenders may not serve as an “other party” for another Participant’s demonstration of qualifications in this same Procurement Process. If a Participant submits multiple Indicative Tenders, whether on its own or jointly with other Participants in this same Procurement Process, or if the Participant also serves as an “other party” for another Participant’s demonstration of qualifications in this same Procurement Process, then pursuant to Section 107, Subs. 5, PPA, the Purchaser shall exclude all Indicative Tenders submitted by such a Participant from consideration.
- 21.3 Indicative Tenders must be submitted in writing, in the Czech language, within the Time Limit for the Submission of Indicative Tenders.
- 21.4 Indicative Tenders shall contain their component documents in both editable format and in secure PDF format; for specification of scope, see Part 4 of these Procurement Documents. Documents that, by logical necessity, were not created by the Participant directly may only be supplied in PDF format.
- 21.5 The Indicative Tender’s Cover Letter must include the date of signing and, if the Participant is a corporation, must be electronically signed by an authorized signatory for the company, particulars to match the corporation’s entry in the Commercial Register. The authorized signatory may empower a representative to sign on its behalf, in which case the Participant will need to include a Power of Attorney to that effect with the Request to Participate; if the Participant is a natural person, they may instruct an authorized representative to sign on their behalf. The Purchaser does not require Participants to submit a signed Draft Contract with their Indicative Tenders.
- 21.6 The wording of Indicative Tenders should be unambiguous, free of insertions, corrections, and other potential points of confusion
- 21.7 Indicative Tenders shall contain the following documents:
 - a) **File A** – Cover Letter,
 - b) **File B** – Draft Contract for Work,
 - c) **File C** – Supplements 1 through 13 of the Draft Contract for Work



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- 21.8 For detailed requirements and information on the contents and presentation of Indicative Tenders, see the relevant Parts of the Procurement Documents – in particular, Part 4, “Forms and Detailed Instructions for Requests to Participate and Tenders”.
22. TIME LIMIT AND MANNER OF SUBMISSION OF INDICATIVE TENDERS
- 22.1 The Time Limit for the Submission of Indicative Tenders will be determined by the Contracting Authority in the Invitation to Submit Indicative Tenders pursuant to Section 61, Subs. 5, PPA following Section 18.1 above.
- 22.2 An Indicative Tender shall be submitted to the Contracting Authority electronically by means of an electronic tool as defined in Section 1.6 above.
- 22.3 Requests to Participate delivered to the Purchaser outside the time period specified in Section 22.1 and 22.2 above and / or in a manner other than that specified in the same shall be considered non-existent and shall thereafter be ignored.
23. OPENING OF INDICATIVE TENDERS
- 23.1 The Purchaser shall open Participants’ Indicative Tenders without undue delay once the Time Limit for the Submission of Indicative Tenders has expired. Indicative Tenders shall be opened in accordance with Section 109, PPA.
24. ASSESSMENT OF INDICATIVE TENDERS
- 24.1 The Purchaser shall assess Indicative Tenders in accordance with Section 39, Subs. 2-a, PPA, i.e., the Purchaser shall assess whether its requirements as stated in these Procurement Documents have been met, as well as verify that the Indicative Tenders submitted comply with applicable legislation.
- 24.2 The Purchaser may, pursuant to Section 46, PPA, request Participants to supply clarification to their Indicative Tenders. In that event, the Purchaser’s request shall specify what the Purchaser considers unclear and requires explained and / or what documents should additionally be submitted. The Purchaser may make multiple such requests of any single Participant, and may also, at its discretion, extend the response deadline or allow it to go unmet.
- 24.3 If a Participant fails to meet the Purchaser’s criteria to the extent listed in the Procurement Documents and any clarifications / additional submissions pursuant to Section 46, PPA, and Section 24.2 hereof, above, fail to rectify the situation, then the Purchaser shall proceed pursuant to Section 48, PPA.

E. INDICATIVE TENDER NEGOTIATIONS**25. INDICATIVE TENDER NEGOTIATIONS**

- 25.1 The Purchaser shall further negotiate Indicative Tenders individually with Participants pursuant to Section 61, Subs. 7. *et seq.*, PPA, with the primary goal of improving Indicative Tenders in the Purchaser's favor.
- 25.2 The Purchaser may, pursuant to Section 61, Subs. 10, PPA, modify or amend tender requirements, for all Participants equally; this in particular concerns the technical requirements, but does not apply to the Minimal Technical Requirements as these are specified in these Procurement Documents.
- 25.3 The number of Indicative Tender negotiations rounds (phases) shall be determined by the Purchaser, in accordance with its needs.
- 25.4 Unless the Purchaser and a particular Participant agree otherwise, and unless negotiations are terminated for reasons relating to the Participant, the Purchaser shall conduct the same number of negotiation rounds with each Participant, assuming adequate cooperation is provided by all.
- 25.5 Participants shall receive formal written invitations for each round of negotiations, listing the date and place and a general description of the topic, unless the date for a new round of negotiations has already been set in the preceding rounds. The invitation, or the agreement from a previous round, shall specify whether the round in question will be individual or whether all Participants will attend jointly. A single invitation may cover multiple future negotiation rounds.
- 25.6 The Purchaser shall prepare a protocol for each completed round of negotiations, which shall include the date of proceedings, the topic, and all agreements reached from which changes in Indicative Tenders might arise. This protocol shall be signed by the authorized representatives of the Purchaser and the Participant(s) at the end of the round. The protocol may include an agreement on the date of the next round, if any. A roll of attendees (name list) shall be appended to each protocol; all attendees of a particular round shall be required to sign their name on the current roll at the start of the round.
- 25.7 If necessary, Participants may be required, by a deadline of the Purchaser's choice recorded in the Indicative Tender negotiations protocol, to submit the relevant portions of the Indicative Tender with explanations / amendments required by the Purchaser in the protocol from the relevant round of negotiations (this may include e.g. additional drawings or descriptions which it would have been impractical to produce during the negotiation session itself), or to submit a particular section of the Indicative Tender if this is required to assess the impact of changes agreed in the negotiations on the Participant's tender. A negotiation round ends when all Participants included in the round have submitted such explanations or amendments to their Indicative Tenders.
- 25.8 Upon signing, the information and agreements given in the negotiation protocol become binding upon all concerned. Agreements recorded later in a signed protocol prevail over agreements recorded earlier. All protocols shall include Participants' agreement to be bound by the protocol's contents, and that any Tenders submitted thereafter pursuant to Section 61, Subs. 11, PPA, shall reflect the agreements made in the protocol.
- 25.9 Negotiations shall take place at the Purchaser's registered office at a date, time, and place specified by the Purchaser. All negotiations shall be conducted in the Czech language. Unless agreed otherwise, a single Participant may have no more than four representatives present at any given round of negotiations.



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- 25.10 Once an Indicative Tender negotiation round has ended, the Purchaser may, at its discretion and pursuant to Section 61, Subs. 11, PPA, inform Participants in writing to that effect.
- 25.11 Pursuant to Section 61, Subs. 8, PPA, the Purchaser also reserves the right to, at its discretion, elect to forgo the Indicative Tender negotiations process and award the Public Contract on the basis of the Indicative Tenders alone, if and when the Purchaser deems the Indicative Tenders, including any potential explanations pursuant to Section 24.2 above, to be acceptable.
26. LIMITATION OF THE NUMBER OF PARTICIPANTS IN INDICATIVE TENDER NEGOTIATIONS AND INVITATION TO TENDER
- 26.1 The Purchaser chooses not to limit the number of Participants allowed in this phase of the procurement process.
- 26.2 Once Indicative Tender negotiations have concluded, the Purchaser shall invite Participants to tender pursuant to Section 61, Subs. 11, PPA.

F. TENDER

27. TENDER FORM, FORMAT, AND SIGNATURES

- 27.1 Pursuant to Section 26.2, Participants shall prepare Tenders upon the Purchaser's Invitation to Tender and in accordance with these Procurement Documents and any relevant Indicative Tender negotiation outcomes. Pursuant to Section 25.8 above, Tenders must reflect all outcomes reached and agreements made in the Indicative Tender negotiation process.
- 27.2 Requirements on Tenders are analogous to the provisions of Sections 21.2, 21.3, 21.4, 21.6, 21.7, and 21.8 above.
- 27.3 Tender Cover Letters and Draft Contracts for Work must include the date of signing and, if the Participant is a corporation, must be electronically signed by an authorized signatory for the company, particulars to match the corporation's entry in the Commercial Register. The authorized signatory may empower a representative to sign on its behalf, in which case the Participant will need to include a Power of Attorney to that effect with the Request to Participate; if the Participant is a natural person, they may instruct an authorized representative to sign on their behalf.

28. SECURITY

- 28.1 Pursuant to Section 41, PPA, all Participants will need to deposit a Security with the Purchaser, to be held against the Participant's compliance with obligations related to the procurement process, in the amount of CZK 5 million (five million Czech koruna). Pursuant to Section 41, Subs. 4, PPA, Participants may provide the Security in one of the following forms:
- An irrevocable and unconditional bank guarantee (as defined in Section 2029 of Act No. 89/2012 – the Civil Code), in writing; or
 - Cash deposit in the Purchaser's account; or
 - Security insurance (as defined in Section 2868 of the Czech Civil Code)
- 28.2 For bank guarantee Security, the electronic form of the original of the security document (i.e., the original of the file provided by the bank, incl. all electronic signatures) shall be appended to File A of the Tender.
- 28.3 For insurance Security, File A of the Tender shall contain the insurer's electronically signed written statement obligating the insurer to pay the Security if the conditions of Section 41, Subs. 8, PPA, are met.
- 28.4 If Security is provided in cash, the Participant shall be required to append to File A of the Tender payment data demonstrating the payment has been sent to the Purchaser's account; account details:
- Domestic account no.: 15605491/0100
 - IBAN: CZ5601000000000015605491
 - SWIFT: KOMBCZPP
 - Domestic "Variable Symbol" routing number: Participant's Business Registration no.
 - Domestic "Specific Symbol" routing number: 888888.
- 28.5 Further terms for the Security:
- a) If Security is paid in cash into the Purchaser's account, the payment must be received in that account no later than the end of the Time Limit for the Submission of Tenders, as this is defined in Section 30.1 below.



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- b) The Security provided must remain valid throughout the Award Period, as this is defined in Section 30.1 below.
- c) The Purchaser shall release the Security back to the Participant on the terms given in Section 41, Subs. 6, PPA.

29. AWARD PERIOD

- 29.1 The Award Period pursuant to Section 3.1.11 above is six (6) months, starting upon expiry of the Time Limit for the Submission of Tenders discussed in Section 30 below. The Award Period may be interrupted pursuant to Section 40, PPA.

30. TIME LIMIT AND MANNER OF SUBMISSION OF TENDERS

- 30.1 The Time Limit for the Submission of Tenders will be determined by the Contracting Authority in the Invitation to Submit Tenders pursuant to Section 61, Subs. 11, PPA following Section 26.2 above.
- 30.2 A Tender shall be submitted to the Contracting Authority electronically by means of an electronic tool as defined in Section 1.6 above.
- 30.3 Requests to Participate delivered to the Purchaser outside the time period specified in Section 30.1 above and / or in a manner other than that specified shall be considered non-existent and shall thereafter be ignored.

31. OPENING OF TENDERS

- 31.1 The Purchaser shall open Participants' Tenders without undue delay once the Time Limit for the Submission of Tenders has expired. Tenders shall be opened in accordance with Section 109, PPA.

32. ASSESSMENT OF TENDERS

- 32.1 Requirements on Tender assessment are analogous to the provisions of Sections 24.1, 24.2, and 24.3 above, with Tenders being further assessed for the inclusion of Indicative Tender negotiation outcomes.

G. EVALUATION OF TENDERS

33. EVALUATION OF TENDERS

- 33.1 The Purchaser shall evaluate Tenders pursuant to Section 114, PPA, and based on the evaluation criteria given in Section 34 below.
- 33.2 Once Tenders have been submitted and evaluated pursuant to Section 61, Subs. 11, PPA (or once Indicative Tenders have been submitted and evaluated, if the Purchaser decides to take the option specified in Section 25.11 above), the Purchaser will open an electronic auction pursuant to Section 120 *et seq.*, PPA, the conditions of which are further specified in Section 36 below; the auction will only apply to the **C** parameter (tender price). Values of **C** given by Participants in their Tenders will be used as inputs for the auction. The auction will not be used to evaluate tenders with respect to other parameters. For those parameters, the values given in Participants' Tenders, or Indicative Tenders, as the case may be, shall be binding and final.
- 33.3 Pursuant to Section 119, Subs. 2, PPA, the Purchaser shall issue a written report on the results of Tender evaluation.

34. EVALUATION CRITERIA

- 34.1 The key evaluation criterion shall be Total Life-Cycle Costs, with the Tender offering the lowest Total Life-Cycle costs being deemed the most suitable.

In determining Total Life-Cycle Cost, **N**, the Purchaser shall use the following general formula: $N = C + S_v + S_w + S_{ee} + D + N_o - V_o$

where:

- 34.1.1 **C** is the Tender Price in CZK, exclusive of VAT, in the extent given in the Procurement Documents and as listed in Subsection 13.1 of Section 13 of the Draft Contract for Work submitted by the Participant as part of the Tender, as required by these Procurement Documents. Price should be given with precision to two decimal places.
- 34.1.2 **S_v** are costs in CZK related to raw lime consumption.
- 34.1.3 **S_w** are costs in CZK related to total water consumption.
- 34.1.4 **S_{ee}** are costs in CZK related to electric power consumption, including consumption for the pressurization of air on the Purchaser's equipment.
- 34.1.5 **D** are costs in CZK related to the unavailability of the system for use when offline.
- 34.1.6 **N_o** are other material costs in CZK related to the operation of the system not included elsewhere.
- 34.1.7 **V_o** are other material revenues in CZK related to the operation of the system not included elsewhere.
- 34.2 Pursuant to Section 61, Subs. 5, PPA, and Supplement 6 to the PPA, the Purchaser shall specify the evaluation criteria for Indicative Tenders (including weighting or other mathematical operations, or rank-ordered list if weighting or other objective mathematical relation among the criteria cannot be specified) in the Invitation to Submit Indicative Tenders.
- 34.3 Pursuant to Section 61, Subs. 11, PPA, and Supplement 6 to the PPA, the Purchaser shall specify the evaluation criteria for Tenders evaluated pursuant to Section 115, PPA, in the Invitation to Tender. The rules for the evaluation of Tenders set out in Section 34.2 above may be modified in the Invitation to Submit Tender, on the basis of negotiation of the terms of tender in the framework of the negotiations on the Indicative Tenders.



35. PARTICIPANT RANKING

- 35.1 The Purchaser shall rank Tenders on Total Life-Cycle Cost, in descending order, i.e., with the Tender offering the lowest Total Life-Cycle Cost ranking first and the Tender offering the highest Total Life-Cycle Cost ranking last.

36. PROCEDURE FOR ELECTRONIC AUCTION

36.1 Basic information on the Electronic Auction

- 36.1.1 The PURCHASER hereby informs prospective Participants that Tenders shall be evaluated via electronic auction (hereinafter, the “eAuction”). The eAuction shall be implemented via the PROEBIZ electronic bidding system.
- 36.1.2 The value of merit for the eAuction shall be **C (the WORK PRICE)**. All other values shall be defined by the Purchaser and shall be inaccessible to change while bidding continues. For the evaluation with respect to these other parameters, the values given in Participants’ Tenders (or Indicative Tenders, if the Purchaser decides to take the option specified in Section 25.11 above), shall be binding and final.
- 36.1.3 Pursuant to Section 121, Subs. 2, PPA, all Participants who have not been excluded pursuant to Section 121, Subs. 1-b, PPA, shall be invited to bid in the eAuction, via an Invitation to Participate.
- 36.1.4 Invitations to Participate in the eAuction shall be delivered into Participants’ electronic mailboxes in the PROEBIZ system; the system attaches an electronic timestamp indicating when the Invitation to Participate had been sent. Pursuant to Section 120, Subs. 4-c, PPA, Invitations to Participate in the eAuction shall include the information provided to Participants for bidding. Pursuant to Section 120, Subss. 4-d through 4-f, PPA, the Purchaser shall further provide information on aAuction procedure, requirements on the submission of new bids, and information on the electronic system used. The eAuction procedure shall be governed by a fixed timetable that shall be further described in Invitations to Participate in the eAuction; bidding phases are specified as follows:
- 36.1.4.1 **Verification Phase:** Pursuant to Section 121, Subs. 2, PPA, the Verification Phase is intended for the Purchaser’s Administrator to set up the eAuction. The Administrator shall enter qualified Participants’ values in accordance with their respective Tenders, as evaluated. Participants may view the eAuction virtual room, but may not make changes of any kind. Participants are only able to view their own data in the Verification Phase.
- 36.1.4.2 **Bidding Phase:** Pursuant to Section 121, Subs. 2, PPA, Participants will be invited to edit their bids and provided the information specified in Section 121, Subs. 7, PPA. Only the relevant Participant may change a bid; the Administrator has no access to this part of the system. The Bidding Phase shall consist of a single round of bidding, which shall terminate pursuant to Section 121, Subs. 8-b, PPA, when no new bids affecting the order of offers are submitted. The bidding round shall be set to a default duration of **20 minutes**, which may be extended as follows: If a new bid changing the current ranking of offers is submitted within the **last 10 minutes** of the current time limit, the eAuction shall be extended **by a further 10 minutes**, counting from the moment of the change in question. The eAuction will be extended in this manner until such time that no changes in the rank order of offers occur in the final 10 minutes. The Purchaser would like to note that the bidding system does not allow new bids to exactly match the current lowest Total Life-Cycle Cost bid (i.e., the currently leading Participant’s bid). The system will be set up to notify Participants if this occurs.
- 36.1.5 The Purchaser would further like to note that in the event of a bid that matches the overall offer of a Participant other than the current leader, ranking between the two Participants

in question will be decided based on the time the bid was placed. In particular, bids that match and would therefore rank equal with other bids, but have been submitted later, shall be ranked lower than the previously-existing bid.

- 36.1.6 The aAuction's minimum difference between bids will be **0.1%**, calculated from the current value of the item being changed (i.e., the existing value of that item for that Participant).
- 36.1.7 The aAuction's maximum difference between bids will not be determined. However, the Purchaser point out that if the bid is less than 5,000,000 CZK or more than the previous bid of the given Participant in this item, then the Purchaser's system will notify this fact and the Participant will be able to decide whether he will confirm his new bid or not.
- 36.1.8 Individual Participants will only be able to see their own current ranking during Bidding Phase.
- 36.1.9 The eAuction is accessed as a browser application; i.e., Participants do not need to install special software on their computers. In the event of material technical difficulties at the Purchaser or the eAuction system provider, the eAuction shall be held again at a later date.
- 36.1.10 Once the eAuction concludes, Participants will be asked to add his electronic signature the final protocol. Pursuant to Section 36, Subs. 5, PPA, the Purchaser has set the time limit for the electronic signing of final protocols to be two business days from the conclusion of the eAuction. The PROEBIZ system attaches the authorized system provider's timestamp to final protocol signatures. Should a Participant fail to electronically sign their eAuction offer, all of that Participant's bids will be considered to be *a priori* invalid for lack of form; pursuant to Section 48, Subs. 2-a, PPA, the Purchaser may exclude such a Participant from the eAuction. Pursuant to Section 24, Subs. 3 of European Parliament and Council Directive (EU) 910/2014, the Purchaser hereby notifies Participants that it will verify Participants' signature certificates at 24 hours after each Participant's electronic signing of the final protocol. Should this verification find a Participant's certificate to be invalid, the Purchaser shall request explanation from that Participant and subsequently determine further steps to be taken.

36.2 PROEBIZ eAuction system technical requirements

- 36.2.1 The following applies to the computer that the Participant will use to remotely access the eAuction through a public Internet connection.

- 36.2.1.1 The PARTICIPANT's computer will need to have a functional connection to the Internet, which must remain active while the Participant is logged in. Participation in the eAuction requires that an internet browser be installed on the computer utilized. The eAuction system is optimized for access from any of the following Internet browsers:

- a) Microsoft Internet Explorer version 11.0 and higher

36.2.1.2 Internet browser settings

- a) The PROEBIZ eAuction system requires that cookies be enabled in the Internet browser instance utilized. For a guide on enabling cookies visit <http://proebiz.com/podpora>.
- b) The computer utilized must have Java Software installed, in the version current as of the time of the eAuction; the eAuction system requires Java to run correctly, particularly in the electronic signature module. Users may verify that their Java Software is up-to-date and, if required, download updates at <http://java.com/>. Java is freeware. Furthermore, Adobe Flash Player must also be installed.
- c) PARTICIPANTS must hold a valid electronic signature based on a certificate qualified with respect to the requirements of European Parliament and Council Directive (EU)

910/2014 and applicable Czech Republic legislation. Electronic signatures based on a qualifying certificate may be obtained from qualified providers in all EU Member States.

- d) Participants are required to name in their Tenders a specific individual to be responsible for their eventual participation in the eAuction (hereinafter, the "Auction Representative"); minimum information required on the Auction Representative is first and last name and electronic mail address. Only a single Auction Representative may be assigned to a single eAuction; if multiple candidates are listed, only the first listed will be enrolled in the eAuction. The Auction Representative will have an account created in the PROEBIZ system (bound to first and last name and e-mail); this account will include the Participant's eAuction Mailbox, through which Participants will be able to receive Invitations to Participate in eAuctions, work on their applications, and access the eAuction room. The system Administrator will notify the Auction Representative of the creation of the Mailbox by sending an Activation e-Mail. Based on instructions found in the Activation e-Mail, the Auction Representative will need to set their login information and activate the Mailbox; thereafter, the Auction Representative will have sole control over Mailbox contents. All information processed through the Mailbox pertains solely to the Participant to whom that Mailbox belongs. In the event of lost or forgotten login information, the Auction Representative should contact the eAuction Administrator with a request to send a new Activation e-Mail; once this e-mail is received, the Mailbox may be reactivated by setting new login information. The Purchaser notes that in the event that an eAuction Mailbox already exists for a particular Auction Representative and is active, the Administrator normally forgoes sending the Activation e-Mail. The Auction Representative will instead be notified of the delivery (unlocking for access) in the Mailbox of an Invitation to Participate in the eAuction via a notification e-mail sent by the Administrator.

H. CONTRACTOR SELECTION AND CONTRACT SIGNING

37. CONTRACTOR SELECTION

- 37.1 Pursuant to Section 113, PPA, the Purchaser shall assess Tenders for the potential occurrence of an Abnormally Low Tender Price, this before selecting a Contractor and sending the Notice of the Selection of an Economic Operator.
- 37.2 Pursuant to Section 122, PPA, the Purchaser shall select as the Contractor that Participant in the procurement process whose Tender the Purchaser has identified as the most economically advantageous based on the results of the evaluation process and the subsequent electronic auction, provided such a Tender does not evince an Abnormally Low Tender Price as this is defined in Section 113, PPA.
- 37.3 Upon the Purchaser's request made pursuant to Section 122, Subs. 3, PPA, the selected Participant / Contractor shall submit to the Purchaser:
- a) Originals or notarized copies of their qualification documents pursuant to Section 14 above, unless previously submitted with the Request to Participate and thus already available to the Purchaser.
 - b) All information and documents required by Section 104, Subs. 2-a, PPA, and Section 104, Subs. 2-b, PPA.

38. NOTICE OF THE SELECTION OF AN ECONOMIC OPERATOR

- 38.1 Pursuant to Section 123, PPA, the Purchaser shall, without undue delay, send the Notice of the Selection of an Economic Operator to all Participants in the procurement process.

39. CONTRACT SIGNING

- 39.1 The Contract between the Purchaser and the selected Contractor shall be entered into pursuant to Section 124, PPA.

40. RESERVED RIGHT TO AMEND CONTRACT

- 40.1 Pursuant to Section 100, Subs. 1, PPA, the Purchaser reserves the right to amend certain provisions of the Contract to be entered into with the selected Contractor; specifically, to change the deadlines for completion given in Section 10.1 of the Contract in any of the following cases:
- If additional works or changes to the Work pursuant to Section 222, PPA, need to be performed, if these have a demonstrable impact on the execution of the Work; deadlines will be postponed by the minimum amount of time necessary to complete such works or changes.
 - In the event of delay caused by the Purchaser; deadlines will be postponed by no more than the duration of such delay.
 - In the event of exceptionally inclement weather such that progress on the Work is demonstrably impeded thereby; deadlines will be postponed by no more than the duration of such weather.
- 40.2 Pursuant to Section 100, Subs. 2 and Section 222, Subs. 10, PPA, in the event of Purchaser's withdrawal from the Contract under the provisions of Section 52.2 of the same, the Purchaser reserves the right to replace the selected Contractor by a new contractor; specifically, by the Participant in the procurement process that had placed second; this provided that the Participant agrees to accede to the Contract in full and at a price identical

to the offer of the original Contractor. In that event, the Purchaser may amend the Contract in any or all of the following ways:

- Amend the definition of the Work to match that part of the Work which remains unfinished.
- Amend the Contract to bind the new Contractor to responsibility for the entirety of the Work, including all warranty claims, non-conformity claims, etc. relating to the portion of the Work completed by the previous Contractor.
- Amend the timetable and any other provisions and Supplements to the Contract that may have become outdated due to the termination of the original Contract; amendments to correspond to the original Contract as closely as possible.
- Amend the Contract to include the handover and acceptance of the Work-in-progress from the previous Contractor.

If the Participant identified as second-best on the base of the evaluation criteria of the procurement process refuses to accede to the Contract in place of the original Contractor under the terms set forth in the preceding paragraph, the Purchaser may invite the Participant identified as third-best to do so instead.



EVROPSKÁ UNIE
Fond soudržnosti
Operační program Životní prostředí



PROCUREMENT DOCUMENTS

for Public Contract
Ref.no. Z2018-033521

**Environmental Improvements on TKY II Heating
Plant – Wet Desulfurization**

PART 2

TERMS AND CONDITIONS



PROCUREMENT DOCUMENTS
Environmental Improvements on TKY II Heating Plant – Wet Desulfurization
PART 2
TERMS AND CONDITIONS

The Contracting Authority for this Public Contract (industry public contract), United Energy, a.s., contract name **“Environmental Improvements on TKY II Heating Plant – Wet Desulfurization”**, ref. no. Z2018-033521 has specified the following terms and conditions for all Contractors / Participants in the procurement process.

The Contracting Authority has set out its terms and conditions in a Draft Contract for Work.

Supplements 1 through 13 of the Draft Contract for Work, listed below in this Part 2 of the Procurement Documents, are an integral part of the Contracting Authority’s terms and conditions

Supplement 1 to the Draft Contract for Work, “Purchaser’s Technical Requirements on the WORK” also serves as Part 3 of the Procurement Documents, the Technical Requirements.

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Ref. no.:	DRAFT CONTRACT FOR WORK	Ref. no.:

Environmental Improvements on TKY II Heating Plant - Wet Desulfurization

DRAFT CONTRACT FOR WORK

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A. CONTRACT AND INTERPRETATION

1. PARTIES TO THE CONTRACT

PURCHASER

United Energy, a.s.

Registered address

2 Teplárenská St., 434 03 Most – Komořany, Czech Republic

a company registered in Section B, File 1722 of the Commercial Register of the Regional Court of Ústí nad Labem, Czech Republic

Authorized signatories

Ing. Milan BOHÁČEK, Deputy Chairman of the Board
Ing. Petr MAREŠ, Director

Authorized representatives for:

- CONTRACT negotiations

- Technical matters

PURCHASER'S REPRESENTATIVE:

Business Registration no. / VAT no. 273 09 959 / CZ27309959

Bank account:

Komerční banka a.s., Most branch,
15605491/0100

and

CONTRACTOR

Registered address

Registered in [Commercial Register details]

Authorized signatories

Authorized representatives for:

- CONTRACT negotiations

- Technical matters

CONTRACTOR'S REPRESENTATIVE:

Business Registration no. / VAT no.

Bank account:

have concluded

pursuant to the outcome of the procurement process for the Public CONTRACT "Environmental Improvements on TKY II Heating Plant - Wet Desulfurization", announced in the Public Tenders Bulletin on 3. 10. 2018, Public CONTRACT no. Z2018-033521, organized by the PURCHASER pursuant to the provisions of Act No. 134/2016 on Public Procurement, as amended, and of the Public Tender Guidelines of the 2014 – 2020 Operational Programme Environment, the following CONTRACT FOR WORK, whereby the CONTRACTOR shall execute, at its own risk and expense and in a proper and timely manner, the WORK, while the PURCHASER shall, in a proper and timely manner, accept the completed WORK and pay the CONTRACT PRICE, on the terms specified below in this CONTRACT. The purpose of the CONTRACT is to ensure the WORK specified herein is

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executed, and commissioned in a proper and timely manner, and that all other parameters and obligations agreed in the CONTRACT are met.

Inspections shall be performed on the basis of an Inspection Agreement executed pursuant to Section 2562 *et seq.* of Act No. 89/2012; thereunder, the Inspector (i.e., the CONTRACTOR) shall impartially determine the actual state of the subject of the inspection, and shall provide an inspection certificate (inspection report) to that effect, while the PURCHASER shall pay to the Inspector a fee that has been incorporated into the price of the WORK.

2. TERMS AND DEFINITIONS

2.1 For the purposes of this CONTRACT, certain terms shall be defined as follows:

"DAY" shall be a calendar day from 12:00 midnight to 12:00 midnight; this includes all days of the year regardless of their position in a week or their possible status as a bank or other holiday observed in the Czech Republic or elsewhere

"WORK" shall be the set of GOODS, RIGHTS OF USE, WORKS, and SERVICES provided by the CONTRACTOR in accordance with the specifications and conditions given in this CONTRACT and its Supplements; the WORK is to be a complete, operational, safe, continuously operable, reliable system possessing the parameters and serving the purpose set forth in this CONTRACT.

"CONTRACT DOCUMENTS" shall be the documents listed in Section 4 of the CONTRACT.

"GUARANTEE MEASUREMENT" shall be the testing performed as part of TESTS "A" and "B", whose purpose is to determine whether the WORK as a whole or a specific part thereof is capable of achieving the guaranteed parameters listed in Supplement 2 to the CONTRACT

"COMPLEX TESTS" shall be the tests performed in accordance with Section 29 of this CONTRACT, whose purpose is to verify that the technical parameters specified for the WORK in the CONTRACT have been met.

"PERFORMANCE TEST" shall be a test performed in accordance with Section 29 of this CONTRACT, whose purpose is to verify that the requirements on operational, safety, and reliability requirements specified for the WORK in the CONTRACT, as well as all other requirements specified in the CONTRACT, have been met.

"FINAL ACCEPTANCE" shall be the PURCHASER's final acceptance of the WORK, which takes place as set forth in this CONTRACT, once the relevant WARRANTY PERIOD has expired. The FINAL ACCEPTANCE is executed by the PURCHASER's signing of the FINAL ACCEPTANCE Protocol (FAC), which shall be drafted in accordance with this CONTRACT.

"MONTH" shall be a calendar month from 12:00 midnight of the first day of the calendar month to 12:00 midnight of the last day of the calendar month.

"WET LIME SCRUBBING" means the capture of acidic compounds from flue-gas (in particular SO₂) by absorption into water or an aqueous solution using lime or lime hydrate.

"CONSTRUCTION EQUIPMENT" shall be the equipment, devices, and tools required for assembly, inspection, and other purposes and necessary to complete the WORK, that however are not part of the WORK itself and whose ownership shall not pass from the CONTRACTOR to the PURCHASER.

"CHANGE FORM" shall be the form drafted pursuant to Subsection 51.2.2. of the CONTRACT, which specifies CHANGES required by either party in accordance with

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Section 51 of the CONTRACT, as well as the conditions for the implementation of such changes.

"PURCHASER" shall be the legal entity identified in Section 1 of the CONTRACT, or its potential legal successors. Procedurally, the PURCHASER shall be represented by a natural person (the PURCHASER'S REPRESENTATIVE) of the PURCHASER's own appointment.

"TRIAL OPERATION" shall be a period of twelve (12) months (unless agreed otherwise) during which the WORK shall operate under the full responsibility of the PURCHASER and during which the CONTRACTOR shall be present, as specified in this CONTRACT, and which begins upon the signing of the Preliminary Acceptance Protocol and ends upon the signing of the TRIAL OPERATION Protocol.

"QUALITY PLAN" shall be the quality document, drafted in accordance with this CONTRACT, which defines the concrete procedures and sequence of activities related to ensuring the quality of the WORK.

"WORKS" shall be the activities of the CONTRACTOR that are essential to the completion of the WORK and that include assembly, installation, design work, and other similar activities of the CONTRACTOR within the scope of this CONTRACT.

"DOCUMENTATION FOR EXECUTION OF THE PROJECT" or the "DESIGN" shall be the documentation so defined in Act No. 183/2006 on Land Use Planning and Construction Procedures (the Construction Act), as amended, and Czech Government Decree No. 499/2006 (on Construction Documentation), as amended, this documentation to be prepared in sufficient depth of detail to allow successful completion of the WORK.

"PROVISIONAL ACCEPTANCE" shall be the PURCHASER's acceptance of the WORK once COMMISSIONING and the PERFORMANCE TEST have concluded successfully as required by the CONTRACT. PROVISIONAL ACCEPTANCE is executed by the PURCHASER's signing of the preliminary Acceptance Protocol (PAC) drafted in accordance with Section 30 of the CONTRACT.

"PRELIMINARY CHANGE ORDER" shall be an order from the PURCHASER to the CONTRACTOR issued pursuant to Subsection 51.2.5 of this CONTRACT.

"SERVICES" shall be the activities required to complete the WORK, including engineering work (supervision, COMMISSIONING, etc.), technical assistance to the PURCHASER, training of PURCHASER'S REPRESENTATIVES, importation of GOODS, and similar obligations of the CONTRACTOR under this CONTRACT.

"CONTRACT FOR WORK" or the "CONTRACT" shall be the present CONTRACT, concluded pursuant to Section 2586 *et seq.* of Act No. 89/2012 – the Civil Code, as amended. The CONTRACT consists of the CONTRACT DOCUMENTS listed in Section 4 of the CONTRACT; unless expressly agreed otherwise, the rights and obligations of the Parties to the CONTRACT are determined pursuant to Section 2586 *et seq.* of the Czech Civil Code.

"CONTRACT PRICE" shall be the sum of money agreed by the Parties in this CONTRACT.

"SITE" shall be the site specified in Supplement 1 to the CONTRACT, where the CONTRACTOR shall undertake the WORK (mainly including the delivery, installation, COMMISSIONING, and testing of the WORK). The SITE shall include assembly sites as set forth in the DESIGN.

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"SUBCONTRACTOR" shall be any entity directly or indirectly contracted by the CONTRACTOR to supply GOODS or execute any part of the WORK on the CONTRACTOR's behalf, as specified in Section 21 of the CONTRACT.

"TEST 'A'" shall be tests and inspections performed in order to determine whether the WORK as a whole or a specific part thereof meet the technical parameters agreed for Test A in the CONTRACT, particularly in Subsection 10.8.2 of Supplement 1 to the CONTRACT.

"TEST 'B'" shall be the process used to verify whether the WORK fulfills the guaranteed parameters agreed in Supplement 2 to the CONTRACT, pursuant to Section 32 of the CONTRACT.

"MECHANICAL COMPLETION" shall be a state wherein the WORK has been completed in accordance with the DESIGN, all assembly has been finished (to the point where COMMISSIONING may begin), the physical structure is solid and clean in terms of assembly and statics, and where all required "cold" testing as specified in Section 28 of the CONTRACT has been completed successfully.

"COMMISSIONING" shall be the commencement of operation of the WORK once MECHANICAL COMPLETION has been achieved and all tests required by Section 29 of the CONTRACT have been performed. The COMMISSIONING phase culminates in a successful PERFORMANCE TEST.

"RIGHTS OF USE" shall be all intangible property rights required for the PURCHASER to be able to use the WORK as agreed in the CONTRACT.

"GOODS" shall be all non-real estate property such as equipment, devices, materials, physical products, items, and things of all manner that are to be procured, delivered, installed, and tested by the CONTRACTOR under this CONTRACT, with CONSTRUCTION EQUIPMENT being excluded from the definition of GOODS. Replacement parts supplied under this CONTRACT are also considered GOODS.

"WARRANTY PERIOD" shall be the period during which the CONTRACTOR is liable for the faultless completion and operation of the WORK, as specified in the relevant provisions of this CONTRACT. The WARRANTY PERIOD begins upon the signing of the Preliminary Acceptance Protocol (PAC) and ends upon the signing of the FINAL ACCEPTANCE Protocol (FAC).

"SITE FACILITIES" shall be all temporary structures and fittings that serve the professional and social needs of persons participating in the WORK. SITE FACILITIES also include structures and fittings owned by the PURCHASER or third parties that are placed at the CONTRACTOR's disposal for the duration of the WORK.

"PURCHASER'S REPRESENTATIVE" shall be the natural person identified in Subsection 7-d of the CONTRACT, or any other person appointed such by the PURCHASER, who is empowered to execute certain rights or obligations that may be delegated to them within the scope of the PURCHASER's authorization. The PURCHASER or its REPRESENTATIVE shall demonstrate the scope of such authorization to the CONTRACTOR by presenting the PURCHASER's Power of Attorney to that effect.

"CONTRACTOR'S REPRESENTATIVE" shall be the natural person identified in Subsection 7-e of the CONTRACT, or any other person appointed such by the CONTRACTOR, who is empowered to execute certain rights or obligations that may be delegated to them within the scope of the CONTRACTOR's authorization. The CONTRACTOR or its REPRESENTATIVE shall demonstrate the scope of such authorization to the PURCHASER by presenting the CONTRACTOR's Power of Attorney to that effect.

"CONTRACTOR" shall be the legal entity identified in Section 1 of the CONTRACT, or its potential legal successors. Procedurally, the CONTRACTOR shall be represented

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by a natural person (the CONTRACTOR'S REPRESENTATIVE) of the CONTRACTOR's own appointment.

"CHANGE" shall be any change or modification to the WORK and / or this CONTRACT; CHANGES shall be managed and executed pursuant to the provisions of Section 51 of the CONTRACT.

"CHANGE ORDER" shall be an order to make a CHANGE given by the PURCHASER on the basis of a duly approved CHANGE FORM pursuant to the provisions of Section 51 of the CONTRACT.

- 2.2 Wherever the CONTRACT requires that a statement, approval, consent, confirmation, or appointment of any kind be made or issued, such a statement, approval, consent, confirmation, or appointment shall, unless agreed otherwise, be made in writing, and all references to "statement", "approval", "consent", "confirmation", and "appointment" shall be interpreted to mean written expression. No such action shall, in and of itself, create or constitute an amendment to this CONTRACT. No such statement, approval, consent, confirmation, or appointment shall be withheld or delayed without reason.
- 2.3 No failure of the PURCHASER to exercise one or more of its rights under this Agreement shall constitute, nor shall be construed to constitute, the PURCHASER's surrender of such rights and /or the PURCHASER's consent in any matter.

3. LEGAL INTERPRETATION OF THE CONTRACT

- 3.1 This CONTRACT is executed pursuant to Section 2586 *et seq.* of Act No. 89/2012 – the Civil Code, as amended (hereinafter, the "Civil Code"). Unless expressly agreed otherwise, the rights and obligations of the Parties hereto shall be determined in accordance with the provisions of Section 2586 *et seq.* of the Civil Code; this shall apply, in reasonable proportion, even if part of the rights and obligations agreed herein do not satisfy the definition of "WORK" employed by the Civil Code.
- 3.2 The CONTRACT has been drafted on the basis of the laws and other general legislation applicable to the WORK in the Czech Republic, as these are in effect on the day of signing of the CONTRACT.
- 3.3 Should any law or other item of general legislation relevant to the execution of the CONTRACT change while the CONTRACT is being executed, the CONTRACTOR shall be required to notify the PURCHASER of such changes in writing and without delay, and, if subsequently requested by the PURCHASER to do so, to change the nature and / or manner of execution of the WORK as required by such changes and in accordance with Section 51 of the CONTRACT.
- 3.4 The Parties hereby declare that the CONTRACT is the product of negotiations between them. In view of this, the Parties further declare that, for the purposes of legal interpretation of the CONTRACT, neither Party considers itself the author of the CONTRACT's text, and that therefore, phrasing admitting multiple interpretations should not be interpreted so as to favor or disfavor, or as favoring or disfavoring, either Party.

4. CONTRACT DOCUMENTS

- 4.1 This CONTRACT consists of the entirety of the CONTRACT DOCUMENTS listed below, all of which are an integral part of the CONTRACT and are binding upon the CONTRACTOR in its execution of the WORK.
- The present CONTRACT, consisting of 56 Sections

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- Supplement 1 PURCHASER's Technical Requirements on the WORK
- Supplement 2 Guaranteed Parameters
- Supplement 3 Documentation
- Supplement 4 Timetable and Execution Plan for the WORK
- Supplement 5 PURCHASER's Cooperation
- Supplement 6 Training
- Supplement 7 List of SUBCONTRACTORS
- Supplement 8 Bank Guarantees for the WORK and for the Deposit
- Supplement 9 Price Specification
- Supplement 10 Roadmap of Key WORK Milestones and Prices
- Supplement 11 Contractors' Code of Conduct
- Supplement 12 CONTRACTOR's Technical Specifications
- Supplement 13 Information on Processing of Personal Data obtained from Data Subject and from other Sources

4.2 The various CONTRACT DOCUMENTS listed above complement and elaborate upon each other. When interpreting the CONTRACT, the entirety of the CONTRACT DOCUMENTS should be considered as an integral whole. In the event of ambiguity or conflict, the provisions of the present CONTRACT proper take precedence over the contents of the Supplements listed above. In the event of doubt regarding the interpretation of Supplements, the contents of lower-numbered Supplements take precedence over the contents of higher-numbered Supplements.

5. APPLICABLE LAW

5.1 The law applicable to the CONTRACT shall be exclusively the law of the Czech Republic, as it is in effect at any given time.

6. RESOLUTION OF DISPUTES

6.1 Should any dispute or difference of opinion arise from or in relation to the CONTRACT between the PURCHASER and the CONTRACTOR, including any and all issues of validity, termination, or execution, whether during the execution of the WORK or after its completion, the Parties to the CONTRACT shall strive to resolve the dispute or difference of opinion via negotiation in good faith.

6.2 Should the Parties fail to reach resolution by negotiation within thirty (30) days from start of negotiations pursuant to Section 6.1 of the CONTRACT, each Party may officially notify the other Party, in writing, of the existence of a dispute (including its nature and basic points of dispute).

6.3 All disputes arising from or in relation to the CONTRACT where negotiation fails shall be decided with final authority by the Court of Arbitration of the Czech Chamber of Commerce and Agricultural Chamber of the Czech Republic, in accordance with that Court's rules of proceedings, by third-party arbitrators, one each selected by each Party. The third arbitrator and chairman of the Arbitration Board shall be selected by joint appointment by the Parties' arbitrators. The Court of Arbitration shall decide based on the preferences of the Parties as these are expressed in the CONTRACT, on the evidence

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presented, and on the law of the Czech Republic.

- 6.4 Both Parties shall have the right to bring a claim before the Court of Arbitration. If either Party brings a claim before the Court, the Party's deposition is required, in particular, to precisely specify the decision sought, enumerate its claims, and precisely specify the provisions of general legislation and / or the CONTRACT being used to support the claim.
- 6.5 Decisions of the Court of Arbitration are final and may not be appealed or suggested for revision or inspection, except where this is allowed by the Court's rules of proceedings. Both Parties shall be required to comply with their obligations arising from such decisions within the time period given in the same.
- 6.6 Proceedings of the Court of Arbitration of the Czech Chamber of Commerce and Agricultural Chamber of the Czech Republic shall be held in Prague, Czech Republic, in the Czech language.
- 6.7 While arbitration proceedings are underway, both Parties shall continue to carry out their obligations as specified in the Timetable and Execution Plan for the WORK until such time as the Court returns a decision. Should the CONTRACTOR cease carrying out its obligations despite the preceding, the PURCHASER shall be entitled to assuage its claims by drawing down against the bank guarantee provided in relation to the WORK, without this affecting the PURCHASER's other rights.

7. NOTICES

- 7.1 Unless specified otherwise in this CONTRACT, any claims, notifications, communication, etc. pursuant to the CONTRACT shall be made in writing and delivered in person, by registered mail, or by courier, to the relevant Party's address as given below in this Section. Unless the CONTRACT provides otherwise, the following shall apply:
- (a) Notices sent via e-mail containing digitized or scanned text to also be hand-delivered, mailed, or delivered by courier no later than three (3) DAYS after the e-mail in question has been sent, shall be considered delivered on the DAY the e-mail is sent.
 - (b) Notices sent by registered mail or courier shall be considered sent, for registered mail, on the date of the receipt provided by the post office of posting (or on the DAY the shipment was accepted by a courier, as documented by the courier's receipt), and shall be considered delivered on the third (3rd) DAY after the date marked on the post office's receipt (date shipment was accepted by courier from sender).
 - (c) Written notices delivered in person shall be considered delivered on the DAY they are handed over the counterparty, or on the DAY the counterparty refuses to take delivery.
 - (d) Any and all notices, communications, reports, etc. intended for the PURCHASER under this CONTRACT shall be sent to the PURCHASER'S REPRESENTATIVE at:

United Energy, a.s.

.....

.....

2 Teplárenská St.

434 03 Most – Komořany, Czech Republic

landline: +420

mobile: +420

e-mail:

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against potential unavailability, copy to be sent to:

United Energy, a.s.

.....

.....

2 Teplárenská St.

434 03 Most – Komořany, Czech Republic

landline: +420

mobile: +420

e-mail:

- (e) Any and all notices, communications, reports, etc. intended for the CONTRACTOR under this CONTRACT shall be sent to the CONTRACTOR'S REPRESENTATIVE at:

Company name

.....

Company address

landline:

mobile:

e-mail:

against potential unavailability, copy to be sent to:

Company name

.....

Company address

landline:

mobile:

e-mail:

- 7.2 Each Party shall notify, in writing and without delay, the other Party of any changes that may occur in the address where notifications are to be sent, in the names of their representatives, or in the relevant telephone numbers and e-mail addresses.

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B. SUBJECT OF THE CONTRACT

8. PURPOSE OF THE WORK

- 8.1 The purpose of the WORK is the construction of a desulphurization system using wet lime scrubbing for boilers K6 through K10, such a system to ensure new emissions standards are met as required by this CONTRACT and by Act No. 201/2012 on Air Quality Protection and the related Directive no. 415/2012 of the Czech Ministry of the Environment, which specify the pollutant emission limits and other conditions for the operation of stationary pollution sources.

9. SUBJECT OF THE CONTRACT – THE WORK

- 9.1 By signing this CONTRACT, the CONTRACTOR agrees to perform for the PURCHASER the WORK, consisting of the realization of the project “Environmental Improvements on TKY II Heating Plant - Wet Desulfurization“, which is required to be a “turnkey” project and to meet all requirements, conditions, specifications, and other information given in the CONTRACT.

The WORK shall include, and “turnkey” should be taken to mean, in particular the following:

- (a) Assessment and evaluation of existing, and potentially the execution of additional, surveys, documentation, information, and data required to perform the WORK.
- (b) Creation and submission of the DOCUMENTATION FOR EXECUTION OF THE PROJECT such as may be required for the due completion of the WORK in the scope and under the terms specified in the CONTRACT.
- (c) Creation and submission of all other documentation required by Supplement 3 to the CONTRACT.
- (d) Construction of SITE FACILITIES such as may be required to complete the WORK as specified in the CONTRACT and to operate the SITE throughout the WORK, including disposal (particularly, with regard to environmental protection, fire safety, and occupational health and safety as required by applicable legislation).
- (e) Provision, i.e., supply and assembly, of the required publicity tools (project / construction information) pursuant to the Rules for Applicants and Beneficiaries and the Required Publicity Graphics Manual published at <http://www.opzp.cz/obecne-pokyny/pravidla-publicity>.
- (f) Arrangement of SITE management and transport to and from the SITE, including offloading, toll duty, taxation, insurance, security, and warehousing of all GOODS, materials, components, etc. required to complete the WORK.
- (g) Demolition / disassembly of existing equipment that is to be replaced by newly installed equipment during the WORK, or that becomes redundant through the completion of the WORK.
- (h) Execution of the construction associated with the WORK in the scope and under the terms agreed in the CONTRACT.
- (i) Provision and assembly of the technology associated with the WORK, including machinery and related systems, monitoring and control systems, and electrical technology in the scope and on the terms specified in the CONTRACT.
- (j) Connection of the WORK to existing structures and systems at the connection points defined in Supplement 1 to the CONTRACT.

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- (k) Supply of replacement parts in the scope and on the terms agreed in the CONTRACT.
- (l) Supply of any and all special tools and devices required to maintain the WORK once completed in the scope and on the terms agreed in the CONTRACT.
- (m) Overall coordination of all deliveries of GOODS, WORKS, and SERVICES within the scope of the WORK.
- (n) Management, monitoring, execution, inspection, and documentation of the preparation and realization phases of the WORK, including updates and the provision of required organizational and planning documentation in the scope and on the terms agreed in the CONTRACT.
- (o) Maintenance of a Construction Log, execution and / or provision of adequate conditions for the execution of expert oversight pursuant to Czech Ordinance no. 499/2006 on Construction Documentation, as amended (the Construction Log to comply with the requirements given in Czech Ordinance no. 499/2006 on Construction documentation, as amended).
- (p) Achievement and documentation of quality characteristics required by the CONTRACT and pursuant to the QUALITY PLAN, including all applicable inspections and tests in the scope and on the terms agreed in the CONTRACT.
- (q) Achievement and submission of all certificates of quality, materials, material testing, assembly progress, completeness, performed inspections, necessary revision reports, protocols, approvals, attestations, consents, and certificates required to execute, operate / use, and gain official approval for the WORK in the scope and on the terms required by the CONTRACT.
Note: Certification of stabilize, energo gypsum and fly ash of fabric filter is the responsibility of the PURCHASER, the CONTRACTOR shall provide effective co-operation.
- (r) Provision of RIGHTS OF USE required for use of the WORK, including relevant documentation, in the scope and on the terms agreed in the CONTRACT.
- (s) Removal of all waste materials arising from the realization of the WORK, on the terms required by the CONTRACT.
- (t) Training of the PURCHASER's operations and maintenance staff, in the scope and on the terms agreed in the CONTRACT.
- (u) Participation of the CONTRACTOR's responsible staff in the discussion and approval of the documentation prepared pursuant to Supplement 3 to the CONTRACT, during GUARANTEE MEASUREMENT, COMMISSIONING, and the official approval for use process, on the terms required by the CONTRACT.
- (v) COMMISSIONING of the WORK, including all relevant tests and inspections and the completion of the WORK on the terms required by the CONTRACT.
- (w) Provision of adequate conditions for the execution of the GUARANTEE MEASUREMENT by an independent entity, and participation in such tests, including the provision and submission of required documentation.
- (x) Provision of guarantees for the quality of the WORK in the extent specified in the CONTRACT and the removal, free of charge, of any defects that may arise during the WARRANTY PERIOD, under the conditions specified in the CONTRACT.
- (y) Cooperation with and support of the PURCHASER in coordinating the WORK with related projects executed by other providers.
- (z) Cooperation with the Occupational Health and Safety Coordinator and compliance with the suggestions, recommendations, and directives of the same.

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- 9.2 The CONTRACTOR shall perform, within the scope of the WORK, all WORKS and SERVICES and deliver all GOODS, including those not explicitly listed in the CONTRACT but that may, logically and in view of the CONTRACT, be reliably deduced to be necessary for the correct functioning and completion of the WORK, this on the same terms as if such WORKS, SERVICES, and GOODS were listed in the CONTRACT.
- 9.3 The subject of the WORK consists of the delivery of GOODS, WORKS, SERVICES, and RIGHTS OF USE, and is further specified in detail in the CONTRACT DOCUMENTS listed in Section 4 of the CONTRACT.

10. WORK TIMETABLE

- 10.1 The CONTRACTOR shall execute the WORK pursuant to the CONTRACT, and shall abide by the detailed timetable given below, and shall deliver the duly completed WORK to the PURCHASER on the timetable specified below:

WORK execution timetable:

(a) Acceptance of SITE for construction and IS marking (once demolitions finish)	Fifty-one (51) DAYS after effective date of CONTRACT
(b) Construction and IS marking.	No later than fifty-seven (57) DAYS after effective date of CONTRACT
(c) SITE turned over to CONTRACTOR	Fifty-seven (57) DAYS after effective date of CONTRACT
(d) MECHANICAL COMPLETION of WORK as defined in CONTRACT	No later than five hundred eighty-one (581) DAYS after effective date of CONTRACT
(e) Training of PURCHASER personnel on WORK operation and maintenance	On timetable given in Supplement 6 to CONTRACT
(f) Preparation for COMPLEX TESTS of WORK as defined in CONTRACT	Thirty-four (34) DAYS after MECHANICAL COMPLETION of WORK
(g) COMPLEX TESTS of WORK pursuant to CONTRACT (including execution and evaluation of GUARANTEE MEASUREMENT pursuant to CONTRACT)	Eighty-three (83) DAYS after end of preparations for WORK COMPLEX TESTS
(h) PERFORMANCE TEST of WORK pursuant to CONTRACT	Spanning four hundred fifty-six (456) hours, once COMPLEX TESTS are completed
(i) Submission of material certificates to PURCHASER pursuant to CONTRACT (Section 5.3.1 of Supplement 1 to CONTRACT)	No later than 5 days before PAC
(j) PROVISIONAL ACCEPTANCE of WORK (PAC) pursuant to CONTRACT	No later than seven hundred twenty-one (721) DAYS after effective date of CONTRACT

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(k) End of WORK TRIAL OPERATION	Twelve (12) months after WORK PROVISIONAL ACCEPTANCE date
(l) FINAL ACCEPTANCE of WORK pursuant to CONTRACT	In phases as WARRANTY PERIODs on various portions of WORK run out, pursuant to Section 43.1.1 of the CONTRACT and other CONTRACT conditions

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Timetable for submission of documentation related to execution of WORK:

	Section ¹⁾	Document	Submitted to PURCHASER
(m)	2.1	Administration Rules	no later than thirty (30) DAYS after date of CONTRACT signing
(n)	2.2	Documentation Plan (PLTD)	no later than twenty-five (25) DAYS after date of CONTRACT signing
(o)	2.3	Quality documentation:	
		– QUALITY PLAN (for WORK as a whole)	no later than twenty-five (25) DAYS after date of CONTRACT signing
		– Inspection and Testing Plan, by project phase and by individual SO/IO/PS/DPS, for:	
		• DESIGN work (structural design)	no later than eleven (11) DAYS after date of CONTRACT signing
		• Own manufacturing	no later than seventy (70) DAYS after date of CONTRACT signing
		• Construction and assembly	no later than twenty-five (25) DAYS after date of CONTRACT signing
		• COMMISSIONING	no later than fifty-six (56) DAYS before date of MECHANICAL COMPLETION
		• TRIAL OPERATION	no later than fifty-six (56) DAYS before date of MECHANICAL COMPLETION
		– Testing plans:	
		• for FAT	no later than 56 DAYS after DOCUMENTATION FOR EXECUTION OF THE PROJECT (DESIGN) for WORK technological section, as discussed with and approved by PURCHASER, has been submitted
		• for COMMISSIONING	no later than fifty-six (56) DAYS before date of MECHANICAL COMPLETION
		– Inspection and Test Book	updated regularly as tests and inspections proceed; complete Inspection and Test Book to be continuously submitted to PURCHASER for review and subsequently handed over before PAC signing

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Section ¹⁾		Document	Submitted to PURCHASER
(p)	2.4	DOCUMENTATION FOR EXECUTION OF THE PROJECT (DESIGN)	
		– Structural section (SO, IO)	no later than eighty-one (81) DAYS after date of CONTRACT signing
		– Technological section (PS, DPS)	no later than one hundred sixty-five (165) DAYS after date of CONTRACT signing
(q)	2.5	Documentation for requests to modify construction in progress:	No later than 56 DAYS after DOCUMENTATION FOR EXECUTION OF THE PROJECT (DESIGN) for WORK technological section, as discussed with and approved by PURCHASER, has been submitted. Any changes arising from design changes during execution – no later than thirty (30) days after PURCHASER approval of design change.
(r)	2.6	Accompanying technical documentation	no later than two (2) DAYS after MECHANICAL COMPLETION, the welding documentation to be continuously handed over to the Purchaser for review.
(s)	2.7	Project for COMMISSIONING	no later than two (2) DAYS after MECHANICAL COMPLETION
(t)	2.8	Project for GUARANTEE MEASUREMENT validating guaranteed parameters:	
		– Proposed methods	no later than two hundred seventy-nine (279) DAYS after date of CONTRACT signing
		– GUARANTEE MEASUREMENT project	no later than three hundred sixty-three (363) DAYS after date of CONTRACT signing
(u)	2.9	Operations Rules	
		– Preliminary	no later than two (2) DAYS after MECHANICAL COMPLETION
		– Final	no later than upon PAC signing
(v)	2.10	Maintenance guidelines	no later than upon PAC signing
(w)	2.11	Documents required for official trial operation approval	no later than on the day of COMPLEX TESTS of WORK
(x)	2.11	Documents required for official approval of finished project	no later than ninety (90) DAYS after PAC.

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Section ¹⁾		Document	Submitted to PURCHASER
(y)	2.12	Documentation for personnel training	on timetable given in Supplement 6 to CONTRACT
(z)	2.13	Documentation of WORK actual state as built	Four (4) complete sets with changes marked, no later than on the day of COMPLEX TESTS of WORK. Ten (10) complete sets of final version, no later than 30 DAYS after end of TRIAL OPERATION.

Notes: ¹⁾ The Sections indicated are sections of Supplement 3 to the CONTRACT.

All deadlines for documentation submission given above apply to documentation **approved** by the PURCHASER.

- 10.2 The CONTRACTOR shall fulfill its obligations on the timetable given in Section 10.1 of the CONTRACT, in the Timetable and Execution Plan for the WORK (Supplement 4 to the CONTRACT), and in the Detailed Timetable and Execution Plan for the WORK prepared and approved pursuant to Section 24.2 of the CONTRACT.
- 10.3 Documentation submitted pursuant to Supplement 3 to the CONTRACT shall be considered duly submitted upon its formal, documented acceptance and approval by the PURCHASER.
- 10.4 Delivery of GOODS required for the WORK shall be considered duly made upon delivery of such GOODS to the SITE in a state deemed satisfactory and acceptable, and the formal, documented acceptance of such delivery by the PURCHASER.
- 10.5 WORKS and SERVICES rendered on the SITE shall be considered duly rendered upon their correct performance at the SITE and formal, documented acceptance by the PURCHASER.
- 10.6 PURCHASER personnel training shall be considered duly provided upon its provision by the CONTRACTOR pursuant to the CONTRACT, as documented by a training protocol with trainee attendance rolls attached.
- 10.7 Early execution of any of the CONTRACTOR's obligations under the CONTRACT shall only be allowed with the written consent of the PURCHASER received prior to such execution.

11. CONTRACTOR'S OBLIGATIONS IN EXECUTION OF THE WORK

- 11.1 The CONTRACTOR shall execute the WORK in its own name, at its own risk and on its own responsibility, and in accordance with the CONTRACT.
- 11.2 The CONTRACTOR shall execute the WORK via its own employees or via the employees of its SUBCONTRACTORS. All CONTRACTOR and SUBCONTRACTOR employees performing certain selected construction activities specified in Section 158 of Act No. 183/2006 on Land Use Planning and Construction Procedures (the Construction Act), as amended (including e.g. design work, construction management, technical oversight, calculations in statics, surveying, etc.) are required by the above named Act and relevant special legislation to possess authorization to perform such activities valid throughout the period required to execute the WORK. The CONTRACTOR shall follow the instructions of the PURCHASER's technical supervisors and the Occupational Health and Safety Coordinator.
- 11.3 The CONTRACTOR shall act as an independent CONTRACTOR executing a CONTRACT. Pursuant to the CONTRACT, the responsibility for the manner of realization of the WORK

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rests solely and fully with the CONTRACTOR. All personnel, representatives, and SUBCONTRACTORS contracted by the CONTRACTOR to execute the CONTRACT are fully answerable to the CONTRACTOR, and shall not be considered employees of the PURCHASER; nothing in this CONTRACT or any agreements the CONTRACTOR may execute in relation thereto may be interpreted to create a direct contractual relationship between such personnel, representatives, or SUBCONTRACTORS on the one side and the PURCHASER on the other.

- 11.4 The CONTRACTOR and its SUBCONTRACTORS shall exercise all due professional care in the execution of the WORK, and shall not jeopardize the safety and reliability of the operation of any other systems belonging to the PURCHASER. The CONTRACTOR shall deliver and execute all GOODS, WORKS, RIGHTS OF USE, and SERVICES relating to this CONTRACT in the scope and at the level of quality required by the CONTRACT, and so as to achieve a complete and continuously, safely, and reliably operable WORK fulfilling the parameters required and compliant with the terms of the CONTRACT. The CONTRACTOR hereby warrants and represents that the WORK shall be functional and shall have no negative impact on the use value and useful life of existing structures and systems and modified portions of existing technology.
- 11.5 The CONTRACTOR shall comply with all general legislation, current CSN standards, and harmonized CSN EN and CSN EN ISO standards relevant to the WORK, as well as the PURCHASER's internal guidelines, pursuant to Section 22 of the CONTRACT.
- 11.6 The CONTRACTOR hereby declares that it entered into the CONTRACT on the basis of certain data and information relating to the WORK provided by the PURCHASER, and of information that it gained by inspecting the SITE, and of other WORK-related information available to it, and attests that it holds this information sufficient to execute the WORK in accordance with the CONTRACT, and acknowledges that any failure on its part to familiarize itself with all such information and data does not absolve the CONTRACTOR of its responsibility to properly estimate the difficulty and price associated with the due and timely completion of the WORK.
- 11.7 Should the data and information provided by the PURCHASER be found to be insufficient or insufficiently complete to execute the CONTRACT, it shall be the responsibility of the CONTRACTOR to obtain any additional required data and information. The PURCHASER shall provide the CONTRACTOR, upon the latter's justified written request made without undue delay, with all required cooperation in obtaining such additional data. The CONTRACTOR shall not be entitled to any additional payments or timetable extensions relating to the WORK for reasons of faulty interpretation of any source information relating to the WORK.
- 11.8 The CONTRACTOR shall, at its own expense, obtain all authorizations, approvals, and consents from Czech public authorities that may be needed to execute the CONTRACT, and obtain all other authorizations, approvals, and consents that may be required to execute the CONTRACT and / or operate the WORK, except those that the CONTRACT or Czech Republic legislation require the PURCHASER to obtain in its own name.
- 11.9 The CONTRACTOR shall, in relation to this CONTRACT, ensure the execution of all tasks and activities mandated by Sections 15 and 16 of Czech Republic Law no, 309/2006, on Additional Occupational Health and Safety Requirements. The CONTRACTOR shall submit to the PURCHASER, no later than thirty (30) DAYS before assuming responsibility for the SITE, the draft Notice of Commencement of WORKS for the Office of Labor Inspection branch relevant to the SITE; once approved by the PURCHASER's authorized representative, this Notice shall be sent to the Office of Labor Inspection branch office. The CONTRACTOR shall ensure that the Notice as approved is displayed on the SITE throughout the execution of the WORK and updated as necessary. The CONTRACTOR shall also prepare documentation required for the Occupational Health and Safety Plan,

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which it will submit to the PURCHASER no later than sixty (60) days before commencement of works at the SITE. Pursuant to the CONTRACT, a log shall be maintained throughout the execution of the WORK of official interactions between the CONTRACTOR and the Occupational Health and Safety Coordinator assigned to the WORK in matters within that Coordinator's purview. This log shall be made available to the PURCHASER at the site on the same terms as the Construction Log.

- 11.10 The CONTRACTOR shall maintain at the SITE, for the entire duration of the CONTRACTOR's activities there and up to the signing of the PROVISIONAL ACCEPTANCE Protocol for the WORK, a complete set of all essential documents, project documentation, drawings, reports, logs, transcripts, letters, notices, etc. relating to the execution of the WORK. Upon the PURCHASER's request, the CONTRACTOR shall, without delay, enable the PURCHASER to peruse such documentation or, upon prior agreement, to make copies of such documentation.
- 11.11 Pursuant to Section 44 of the CONTRACT, the CONTRACTOR shall be liable for any and all damages arising to the PURCHASER in relation with the CONTRACTOR's breach of mandatory legislation and standards as set out in Section 11.5 of the CONTRACT.
- 11.12 The CONTRACTOR shall provide the PURCHASER with RIGHTS OF USE to the WORK in the scope and on the terms specified in the CONTRACT. Unless agreed otherwise in the CONTRACT, such rights shall be transferred to the PURCHASER no later than on the date of PROVISIONAL ACCEPTANCE of the WORK. To the extent that RIGHTS OF USE are creative works or other works subject to licensable intellectual property rights, the CONTRACTOR shall provide the PURCHASER, no later than upon PROVISIONAL ACCEPTANCE, a non-exclusive license including the right of transfer to legal successors (incl. any potential successors to ownership of the WORK), but not including sub-licensing rights, to all such intellectual property rights subjects, in the scope required to enable the proper use, maintenance, repair, renovation, and modification of the WORK. Compensation for the provision of such rights, including licenses, has been included in the CONTRACT PRICE.
- 11.13 The CONTRACTOR shall, pursuant to Section 44 of the CONTRACT, reimburse the PURCHASER for any and all damages that may arise to the PURCHASER as a result of any infringement, or claim of infringement, of any rights, trademarks, copyright, or other intellectual property rights relating to the equipment, WORKS, and GOODS used in the WORK or in relation to it, registered or otherwise valid in the Czech Republic as of the date of signing of the CONTRACT.
- 11.14 The CONTRACTOR shall indemnify and hold harmless the PURCHASER and its employees for any lawsuits, proceedings, sanctions and orders arising from administrative proceedings, warranty and other claims, damages, losses, expenses, and costs of any kind, including costs of legal representation in matters of loss of life or limb of any natural persons and of loss or damage to any property, arising in relation the execution of the WORK from matters within the responsibility of the CONTRACTOR.
- 11.15 In the event that the CONTRACTOR requires the placement of a temporary structure on, or other modifications to, the PURCHASER's premises, such changes shall need to be agreed in advance, in writing, with the PURCHASER.
- 11.16 Room and board, healthcare, and insurance of the CONTRACTOR's and its SUBCONTRACTORS' personnel shall be the responsibility of the CONTRACTOR.
- 11.17 Pursuant to Section 2-e of Act No. 320/2001 on Financial Inspection in the Public Administration and the Amendment of Certain Other Laws (the Financial Inspection Act), as amended, the CONTRACTOR shall provide effective cooperation in the execution of any financial inspections.
- 11.18 The CONTRACTOR shall, without undue delay, inform the PURCHASER in the event that insolvency proceedings are brought against the CONTRACTOR. In such an event, the

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CONTRACTOR shall further take all necessary steps to protect the PURCHASER's property, including all portions of the WORK whose ownership has already passed to the PURCHASER.

- 11.19 The CONTRACTOR shall cooperate in the maintenance and regular updating of a list of all SUBCONTRACTORS and their employees, including SUBCONTRACTOR percentage shares in the WORK.
- 11.20 The CONTRACTOR shall ensure public roads affected by construction at the SITE are cleaned as necessary.
- 11.21 The CONTRACTOR warrants and represents that all GOODS provided under the CONTRACT shall be genuine, new, and not used.
- 11.22 The CONTRACTOR shall, as part of the WORK, have prepared, executed, and evaluated by an independent third party the GUARANTEE MEASUREMENT; the third party to perform the GUARANTEE MEASUREMENT must be approved by the PURCHASER.
- 11.23 The provisions of this Section 11 do not affect the obligation of the CONTRACTOR to meet all its obligations and duties given in the entirety of the CONTRACT.

12. PURCHASER'S COOPERATION

- 12.1 The PURCHASER shall, on the basis of a justified request or notice from the CONTRACTOR, without delay and at the PURCHASER's own expense, obtain all authorizations, licenses, approvals, and consents for which Czech Republic legislation explicitly mandates that they be procured by the PURCHASER in its own name. The CONTRACTOR shall, however, provide all cooperation required by the PURCHASER to obtain such authorizations, licenses, approvals, etc. If, during the execution of the CONTRACT, authorizations, licenses, approvals, or consents are issued that are material to the execution of the CONTRACT and that are delivered solely to the PURCHASER, the PURCHASER shall, without delay, inform the CONTRACTOR of all material information contained in or arising from such documents. If such information affects the execution of the CONTRACT, the Parties shall commence consultations pursuant to Section 51 of the CONTRACT.
- 12.2 The PURCHASER shall hand over the SITE to the CONTRACTOR in the state described in Supplement 1 to the CONTRACT, and shall make the SITE accessible to the CONTRACTOR on or, if possible, before the date given for such in the Timetable and Execution Plan for the WORK and in the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT, this on the basis of a written request of the CONTRACTOR delivered to the PURCHASER no later than one week in advance. The PURCHASER shall prepare, and both Parties shall sign, a SITE Acceptance Protocol for the hand-over of the SITE to CONTRACTOR.
- 12.3 The PURCHASER shall furnish the services of an Occupational Health and Safety Coordinator pursuant to Act No. 309/2006.
- 12.4 Technical supervision of the WORK shall be performed by the PURCHASER or a third party engaged by the PURCHASER; this party may not be the CONTRACTOR, nor a party linked to the CONTRACTOR.
- 12.5 The PURCHASER shall, no later than on the date of commencement of COMMISSIONING, provide duly qualified operators in the scope and on the terms agreed in the Project for COMMISSIONING and in the Test Programs given in Supplement 3 to the CONTRACT.
- 12.6 Between the commencement of COMMISSIONING and the date of signing of the PROVISIONAL ACCEPTANCE Protocol for the WORK, the PURCHASER shall provide all consumables, grid energy, and services required to properly operate the WORK.

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- 12.7 The PURCHASER shall, before the start of the COMPLEX TESTS, obtain a Decision from the Czech Office of Construction approving trial operation of the WORK pursuant to Section 124 of Act No. 183/2006 on Land Use Planning and Construction Procedures (the Construction Act), as amended. The CONTRACTOR shall, upon request, provide the PURCHASER with all required cooperation.
- 12.8 The facilities, premises, consumables, grid energy, and services to be provided by the PURCHASER as part of its cooperation with the CONTRACTOR on the execution of the WORK are listed in Supplement 5 to the CONTRACT. Such consumables, grid energy, and services shall be provided by the PURCHASER in return for payment, to be agreed in separate contracts.
- Consumables, grid energy, and services shall be supplied on existing interfaces only. The CONTRACTOR shall, upon receipt of the PURCHASER'S REPRESENTATIVE'S written consent, distribute such consumables, energy, and services from existing interfaces to where they may be needed. The PURCHASER shall designate connection points to grid energy (pressurized air, electricity) and water mains for the CONTRACTOR to use, and shall allow the CONTRACTOR to make the required temporary connections.
- 12.9 Everything not provided by the PURCHASER pursuant to the CONTRACT shall be provided by the CONTRACTOR and included in the CONTRACT PRICE.
- 12.10 The PURCHASER shall coordinate the CONTRACTOR'S activities at the SITE with the activities of the PURCHASER and any legal or physical persons of the PURCHASER'S engagement, particularly as regards connection points for related technologies, access paths, handling and storage dump areas, etc.
- 12.11 In the preparation of the project documentation, the PURCHASER shall allow the CONTRACTOR to peruse such project documentation as the PURCHASER may have available on the actual state of the equipment affected by the WORK and on current operating procedures, or the PURCHASER may allow the CONTRACTOR to borrow prints or make electronic copies of such documentation, if available.
- 12.12 The PURCHASER shall provide, free of charge, initial training on Occupational Health and Safety, fire safety, and environmental safety to personnel of the CONTRACTOR and its SUBCONTRACTORS.
- 12.13 The PURCHASER shall, free of charge, allow the personnel of the CONTRACTOR and its SUBCONTRACTORS entry onto the premises of Komořany water heating plant, Teplárna Komořany, United Energy, a. s. (hereinafter, "TKY"), provided such access is both necessary and brief.
- 12.14 Regardless of the provisions of this Section 12 of the CONTRACT, the PURCHASER shall be required to fulfill of its obligations and duties given in the CONTRACT. The Parties have agreed that, should the PURCHASER be in delay in its cooperation, but the delay not materially affect the CONTRACTOR'S execution of the WORK and / or the CONTRACTOR'S ability to execute the WORK on the timetable agreed in the CONTRACT, then the CONTRACTOR shall not be entitled to any extensions of the timetable given in the CONTRACT, nor to a change in the CONTRACT PRICE; furthermore, the provisions of Sentence 2 of Section 1968 (on *Creditor Default*) of the Czech Civil Code shall not apply to such PURCHASER delays.
- 12.15 The Parties have agreed to exclude their relationship under this CONTRACT from applicability of the provisions of Section 2591 (on *PURCHASER Cooperation*) of the Czech Civil Code.
- 12.16 Regardless of the provisions of this Section 12, the PURCHASER remains bound to meet all its obligations and duties agreed in the CONTRACT.

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C. PAYMENT

13. CONTRACT PRICE

- 13.1 In consideration of the CONTRACTOR's due completion of the WORK pursuant to the CONTRACT, the PURCHASER shall pay to the CONTRACTOR the CONTRACT PRICE, in the amount of:

CZK [enter amount in format (...)X,XXX,XXX.00]

(that is, [enter amount in words] Czech koruna)

- 13.2 The CONTRACT PRICE amount is exclusive of Value Added Tax (hereinafter, "VAT") payable in the Czech Republic. VAT payment shall be handled pursuant to relevant legislation in effect at the time of the transaction(s) to be taxed.
- 13.3 The CONTRACT PRICE includes all costs, risks, reserves, and profits of the CONTRACTOR related to the proper and timely completion of the WORK, as well as all taxes, fees, tolls, licenses, and usage rights that may arise pursuant to the CONTRACT, and further all financial expenses related to the execution of the WORK and to the evolution of prices and exchange rates, until such time as the CONTRACTOR's obligations under this CONTRACT have been fulfilled.
- 13.4 The CONTRACT PRICE is a mutually-agreed fixed price, subject to no other changes than those explicitly provided for in the CONTRACT.
- 13.5 Supplement 9 to the CONTRACT specifies price details and by-item breakdowns of the WORK. Prices of GOODS, RIGHTS OF USE, WORKS, and SERVICES not explicitly listed in those price details but part of the CONTRACT are assumed to be included in the items that are listed in the price details.
- 13.6 The CONTRACTOR shall provide the PURCHASER, for the purposes of booking of the WORK's transfer into the PURCHASER's ownership, with details of the CONTRACT PRICE prepared in accordance with the PURCHASER's accounting methods, no later than thirty (30) DAYS before the PROVISIONAL ACCEPTANCE date agreed for the WORK in the CONTRACT, details of the PURCHASER's accounting methods to be provided to the CONTRACTOR ninety (90) days before the PROVISIONAL ACCEPTANCE date.

14. TERMS OF PAYMENT

- 14.1 All payments due in relation to the WORK shall be made in Czech koruna (CZK) pursuant to Section 13.1 of the CONTRACT.
- 14.2 Payments during the WORK's execution (installments of the CONTRACT PRICE) shall be made partly as the deposit payment specified in Section 14.4-a, and partly as partial payments (installments) against the PURCHASER's approval of duly reached milestones as specified in Supplement 10 to the CONTRACT.
- 14.3 The CONTRACTOR's claims of payment against the PURCHASER shall be made in writing, in the form of an advance invoice (request for payment in advance) with subsequent tax receipt issued against the received payment (advance), and of partial invoices – tax receipts including adequate description of the GOODS and RIGHTS OF USE supplied and / or WORKS and SERVICES rendered, and including all other documentation required under the CONTRACT, and only once the CONTRACTOR's obligations required for payment under the CONTRACT have been met. The advance invoice and partial invoices / tax receipts must use the same definitions of WORKS, SERVICES, RIGHTS OF USE, and GOODS that are used in the price tables, the Roadmap of Key WORK Milestones and Prices, and the

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Timetable and Execution Plan for the WORK.

The advance invoice and partial invoices / tax receipts need to be demonstrably delivered to the PURCHASER at:

United Energy, a.s.
2 Teplárenská St.
434 03 Most – Komořany, Czech Republic
Czech Republic

with the demonstrable date of delivery being the date on the PURCHASER's stamp printed on the envelope upon taking delivery.

14.4 The Parties have agreed on the following payment structure for the CONTRACT PRICE:

(a) Deposit

A Deposit of fifteen (15) per cent of the CONTRACT PRICE for the WORK specified in Section 13.1 of the CONTRACT, plus VAT, shall be claimed by the CONTRACTOR within twenty-one (21) days from the effective date of the CONTRACT, pursuant to Section 56.2 of the CONTRACT. The PURCHASER shall pay to the CONTRACTOR the Deposit within thirty (30) days of the effective date of the CONTRACT and the PURCHASER's receipt of the following:

- (i) CONTRACTOR's advance invoice for the amount of the Deposit, plus VAT
- (ii) CONTRACTOR's bank guarantee for the Deposit, made out on the Deposit amount exclusive of VAT, issued pursuant to Section 16.2 of the CONTRACT and to Supplement 8 of the CONTRACT.
- (iii) CONTRACTOR's bank guarantee for the execution of the WORK, issued pursuant to Section 16.1 of the CONTRACT and to Supplement 8 of the CONTRACT.

The CONTRACTOR shall provide the PURCHASER, no later than fifteen (15) days of the date of receipt of the Deposit payment pursuant to Section 14.4-a of the CONTRACT in the CONTRACTOR's account, with a tax receipt containing all information required of tax receipts by Czech general legislation as it is in effect on the DAY the invoice (tax receipt) is issued, and further containing:

- Identification of the deposit covered by the tax receipt
- CONTRACTOR's trading name and registered or office address
- PURCHASER's trading name and registered address, given as:
United Energy, a.s.
2 Teplárenská St.
434 03 Most – Komořany, Czech Republic
- PURCHASER's and CONTRACTOR's Business Registration numbers
- PURCHASER's and CONTRACTOR's VAT numbers
- CONTRACTOR's Business Registry file ID information
- PURCHASER's CONTRACT number

(b) Invoicing based on WORK progress:

Upon the completion of the WORK's milestones as specified in Supplement 10 of the CONTRACT, the PURCHASER shall pay to the CONTRACTOR the consideration agreed for the milestone in question as milestones are met, as given in Supplement 10 to the CONTRACT, and within thirty (30) DAYS of the receipt from the CONTRACTOR of:

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- (i) Copy of Progress Report as defined in Section 20.3-d of the CONTRACT, signed by PURCHASER
- (ii) CONTRACTOR's partial invoice

Partial invoices shall be made out to one hundred (100) per cent of the value agreed for partial payments, reduced for the aliquot part of the Deposit (the advance payment) specified in Section 14.4-a of the CONTRACT.

The final partial invoice as per Supplement 10 of the CONTRACT (i.e., the final payment) shall further include a detailed listing of the WORK's CONTRACT PRICE, for the purposes of the entry of the WORK's various portions into the PURCHASER's Property, Plant & Equipment account, as required by Act No. 563/1991 on Accounting, as amended.

The CONTRACTOR shall issue partial invoices / tax receipts for milestone payments as the requisite milestones are met, once milestones have been met.

Invoices issued by the CONTRACTOR, the CONTRACTOR being a Value Added Tax (hereinafter, "VAT") payer in the Czech Republic, shall also serve as tax receipts, and shall be issued on the DAY of the taxable transaction in question, but in any event no later than fifteen (15) DAYS from that DAY, and shall meet all requirements on tax receipts pursuant to applicable general legislation as it is in effect on the DAY of invoice issue. The invoice / tax receipt shall contain all information required by Section 435 (on *Information Required on Certain Documents and on the Internet*) of the Czech Civil Code, as well as all information required for tax receipts pursuant to Act No. 235/2004 on Value Added Tax, as amended (hereinafter, the "VAT Act"); in particular, the following:

- Invoicing CONTRACTOR's trading name and registered or office address
- Business Registry file ID information
- PURCHASER's trading name and registered address, including first and last name of PURCHASER's representative in matters of contract, PURCHASER trading name and registered address as follows:
United Energy, a.s.
2 Teplárenská St.
434 03 Most – Komořany, Czech Republic
- PURCHASER's and CONTRACTOR's VAT numbers
- PURCHASER's and CONTRACTOR's Business Registration numbers
- Invoice number
- Scope and subject of taxable transaction, incl. partial items and accounts
- Date of taxable transaction, being the date of completion of milestone given in Progress Report as signed by PURCHASER and appended to invoice
- Date of issue
- Price inclusive of VAT
- Aliquot part of Deposit attributable to partial invoice, incl. number of advance invoice, to be deducted in before-tax amount and tax portions
- PURCHASER's CONTRACT number and name of WORK
- Trading name, code, and SWIFT ID of CONTRACTOR's bank
- Number of account payment is to be made into, including IBAN; account must be registered in the VAT Payers Registry
- Invoice due date, pursuant to CONTRACT

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- CONTRACTOR's stamp and signature

In the event that milestone (part payment) deadlines given in the Roadmap of Key WORK Milestones and Prices and the Detailed Timetable and Execution Plan for the WORK pursuant to Section 24.2 of the CONTRACT or quality or other material provisions of the CONTRACT are not being met for reasons due to the CONTRACTOR, the PURCHASER may postpone payment of subsequent partial invoices until such time that the non-conformity has been resolved. In that event, the CONTRACTOR shall continue carrying out its obligations under the CONTRACT regardless.

- 14.5 The PURCHASER may return invoices lacking the formal requirements given in this Section 14 of the CONTRACT, or otherwise non-conforming, to the CONTRACTOR at any time before the invoice due date. In that event, the PURCHASER shall always give the CONTRACTOR the reasons for the return. Depending on the nature of the issue, the CONTRACTOR shall then either correct or re-issue the invoice and any attachments. The original due date shall be considered void in the event of a justified invoice return. A new due date shall be set counting from the day when PURCHASER receives an amended, corrected, or re-issued invoice possessing all features required by the CONTRACT.
- 14.6 In the event that the CONTRACTOR breaches its obligations under the CONTRACT, the PURCHASER may set off against the CONTRACTOR's claims on the PURCHASER any of the PURCHASER's justified claims on the CONTRACTOR and their accessories; in particular, contractual penalties and penalties or other sanctions levied against the PURCHASER by public authorities in relation to the CONTRACTOR's execution of the WORK (or execution of the WORK by other parties engaged to that end by the CONTRACTOR), provided that the penalty or other pecuniary sanction is the fault of the CONTRACTOR (or of another party engaged by the CONTRACTOR to execute the WORK or a part thereof).
- This right of set-off further extends to all other claims, and their accessories, of the PURCHASER on the CONTRACTOR (pursuant to the CONTRACT, or to other agreements between the PURCHASER and the CONTRACTOR, or to enforceable judicial or administrative rulings), including contractual penalties and claims of damages, as well as claims relating to the PURCHASER's provision of goods or services to the CONTRACTOR in return for payment.
- The CONTRACTOR may not, at its own discretion, set off any of its claims, even partially, against the PURCHASER's claims without the prior written consent of the PURCHASER.
- In the event that the CONTRACTOR has pecuniary obligations vis-à-vis its SUBCONTRACTORS in the WORK exceeding, in sum, ten (10) per cent of the value of the agreement concluded between the CONTRACTOR and that individual SUBCONTRACTOR, the PURCHASER may pay the CONTRACT PRICE for the WORK, or a part thereof, directly to the SUBCONTRACTOR, in accordance with the provisions of general legislation.
- 14.7 All banking fees and expenses arising to the PURCHASER with the PURCHASER's bank in relation to the PURCHASER's payments to the CONTRACTOR shall be borne by the PURCHASER; other banking fees and expenses shall, unless agreed otherwise in the CONTRACT, be borne by the CONTRACTOR and part of the CONTRACT PRICE.
- 14.8 The CONTRACTOR shall not be entitled to any financial or other advantages arising from its potential early completion of WORKS or SERVICES or early supply of GOODS or RIGHTS OF USE, or from early completion of the WORK as a whole.
- 14.9 The prices of any additional work requested and duly approved by the PURCHASER shall be calculated on the terms given in Section 51 of the CONTRACT.
- 14.10 No payment made by the PURCHASER under Section 14 of the CONTRACT shall be considered to constitute the PURCHASER's acceptance of the WORK or any part thereof. No partial payment made by the PURCHASER shall be held to constitute acknowledgment

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of any debt owed by the PURCHASER to the CONTRACTOR in the sense of Section 2054, Subs. 2 (on *Further Manners in Which Debt May Be Acknowledged*) of the Czech Civil Code.

- 14.11 The PURCHASER shall not be considered to be in delay or default on its obligation to pay invoices so long as the PURCHASER's account was debited for the amount due to the CONTRACTOR no later than on the invoice / advance invoice due date.
- 14.12 The Parties have agreed to an interest rate on arrears in the amount of the 1W PRIBOR rate + 1% p.a. for each day of delay in payment begun.

15. TAXES, CUSTOMS, AND FEES

- 15.1 The CONTRACTOR hereby declares to have familiarized itself with the tax, customs, and administrative legislation of the Czech Republic and to have included in the CONTRACT PRICE and to be prepared to pay all taxes, customs duties, and fees that are or may be required by the relevant public authorities in relation to the execution of the WORK.
- 15.2 The CONTRACTOR hereby declares that the bank account it has given in this CONTRACT is an account registered in the VAT Payers Registry of the Czech Tax Administration pursuant to Act No. 235/2004 on Value Added Tax, as amended.
- 15.3 The CONTRACTOR declares that, as of the date of signing of this CONTRACT, the Tax Administration has not issued against it an Unreliable Payer Ruling in the sense of Section 206-a of Act No. 235/2004 on Value Added Tax, as amended; that the associated proceedings have not been brought against it, and that it is not subject to conditional deferral of such proceedings with the relevant Tax Authority.
- 15.4 The CONTRACTOR acknowledges and consents that, in the event that it ceases to meet the conditions given in Sections 15.2 and 15.3 of the CONTRACT, the PURCHASER shall pay the amount of Value Added Tax given on the CONTRACTOR's tax receipts directly into the account of the CONTRACTOR's Tax Administration office, while the CONTRACTOR shall be paid the before-tax amount.
- 15.5 In the event that the CONTRACTOR fails to pay any taxes, customs duties, or fees, and that public authorities subsequently claim such payments from the PURCHASER and the PURCHASER pays, the PURCHASER may claim reimbursement from such payment and any other related costs and damages from the CONTRACTOR. Should the CONTRACTOR fail to reimburse the PURCHASER for such payments, costs, or damages within 30 DAYS of being requested to do so, the PURCHASER may set off the amount owed against any of the CONTRACTOR's claims, or else demand satisfaction of its claim from the bank guarantee.
- 15.6 The CONTRACTOR shall ensure that the no obligation arises to the PURCHASER to guarantee or directly pay any taxes, fees, or other mandatory payments that are properly the responsibility of the CONTRACTOR.

16. BANK GUARANTEES FOR THE WORK AND FOR THE DEPOSIT

- 16.1 Bank guarantee for the WORK:
- 16.1.1 The CONTRACTOR shall procure and submit to the PURCHASER a bank guarantee for the execution of the WORK in the amount of ten per cent (10%) of the CONTRACT PRICE exclusive of VAT, denominated in the same currency as the CONTRACT PRICE. The CONTRACTOR shall submit the bank guarantee to the PURCHASER within twenty-one (21) days from the effective date of the CONTRACT, pursuant to Section 56.2 of the CONTRACT. The bank guarantee for the execution of the WORK must be valid until at least sixty (60)

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days after the date of signing by both Parties of the FINAL ACCEPTANCE Protocol for the technology section of the WORK pursuant to Section 32.3 of the CONTRACT.

- 16.1.2 The CONTRACTOR shall, no later than thirty (30) days before the expiry of the bank guarantee for the WORK pursuant to the preceding Section 16.1.1 of the CONTRACT, submit to the PURCHASER a bank guarantee for the execution of the WORK in the amount of six per cent (6%) of the CONTRACT PRICE exclusive of VAT, denominated in the same currency as the CONTRACT PRICE. This bank guarantee shall be valid from the day following the date of expiry of the bank guarantee specified in the preceding Section 16.1.1 of the CONTRACT, and must remain valid until at least sixty (60) days after the date of signing by both Parties of the FINAL ACCEPTANCE Protocol for the technology section of the WORK pursuant to Section 32.4 of the CONTRACT.
- 16.1.3 The CONTRACTOR shall, no later than thirty (30) days before the expiry of the bank guarantee for the WORK pursuant to the preceding Section 16.1.2 of the CONTRACT, submit to the PURCHASER a bank guarantee for the execution of the WORK in the amount of three per cent (3%) of the CONTRACT PRICE exclusive of VAT, denominated in the same currency as the CONTRACT PRICE. This bank guarantee shall be valid from the day following the date of expiry of the bank guarantee specified in the preceding Section 16.1.2 of the CONTRACT, and must remain valid until at least sixty (60) days after the date of signing by both Parties of the FINAL ACCEPTANCE Protocol for the WORK pursuant to Section 32.5 of the CONTRACT.
- 16.1.4 The bank guarantees for the WORK defined in Sections 16.1.1, 16.1.2, and 16.1.3 of the CONTRACT shall be issued by a first-class European bank rated by Standard & Poor's no lower than A- and acceptable to both the CONTRACTOR and the PURCHASER.
- 16.1.5 The bank guarantee for the WORK shall be irrevocable, unconditional, payable upon first request and without the need to give due reason, and shall comply with the conditions given in the template form in Supplement 8 of the CONTRACT. The PURCHASER shall have no fewer than seven (7) days to assess and approve the selected bank and the form.
- 16.1.6 The bank guarantee for the WORK shall be the responsibility of the CONTRACTOR. All expenses related to the bank guarantee for the WORK and its provision shall be borne by the CONTRACTOR and included in the CONTRACT PRICE.
- 16.1.7 In the event of delay in the FINAL ACCEPTANCE of portions of the WORK pursuant to Section 32.3, 32.4, or 32.5 of the CONTRACT for reasons due to the CONTRACTOR, the CONTRACTOR shall, at its own expense, ensure the extension of the relevant bank guarantee for the WORK to comply with the conditions given in Section 16.1 of the CONTRACT. Should the CONTRACTOR fail to do so, the PURCHASER may, fourteen (14) days before the expiry of the original bank guarantee for the WORK, use the existing bank guarantee for the WORK or a part thereof for the PURCHASER's benefit, without this affecting any of the PURCHASER's rights under the CONTRACT. The PURCHASER shall return any such amounts drawn from the bank guarantee to the CONTRACTOR immediately after the CONTRACTOR submits to the PURCHASER a duly extended bank guarantee.
- 16.1.8 The bank guarantee for the WORK shall be a guarantee of all of the CONTRACTOR's obligations arising from or in relation to the CONTRACT. These obligations include the provision of the bank guarantees for the WORK pursuant to Sections 16.1.2 and 16.1.3 of the CONTRACT.
- 16.1.9 A template form for the bank guarantee for the WORK including parameters and terms required by the PURCHASER is provided in Supplement 8 of the CONTRACT.
- 16.2 Bank guarantee for the Deposit:

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- 16.2.1 The CONTRACTOR shall obtain a bank guarantee for the Deposit in the amount given in Section 14.4-a of the CONTRACT and submit this guarantee to the PURCHASER in accordance with the CONTRACT. The bank guarantee for the Deposit shall remain valid no less than thirty (30) days after the signing of the PROVISIONAL ACCEPTANCE Protocol for the WORK pursuant to Section 30 of the CONTRACT.
- 16.2.2 The bank guarantee for the Deposit defined in Section 16.2.1 of the CONTRACT shall be issued by a first-class European bank rated by Standard & Poor's no lower than A- and acceptable to both the CONTRACTOR and the PURCHASER
- 16.2.3 The bank guarantee for the Deposit shall be irrevocable, unconditional, payable upon first request and without the need to give due reason, and shall comply with the conditions given in the template form in Supplement 8 of the CONTRACT. The PURCHASER shall have no fewer than seven (7) days to assess and approve the selected bank and the form.
- 16.2.4 The bank guarantee for the Deposit shall be the responsibility of the CONTRACTOR. All expenses related to the bank guarantee for the Deposit and its provision shall be borne by the CONTRACTOR and included in the CONTRACT PRICE.
- 16.2.5 In the event of delay in the MECHANICAL COMPLETION of the WORK pursuant to Section 28 of the CONTRACT for reasons due to the CONTRACTOR, the CONTRACTOR shall, at its own expense, ensure the extension of the bank guarantee for the Deposit to comply with the conditions given in Section 16.2.1 of the CONTRACT. Should the CONTRACTOR fail to submit the extended guarantee to the PURCHASER within twenty-one (21) days from the PURCHASER's request, the PURCHASER may draw down against the existing bank guarantee for the Deposit up to its total value.
- 16.2.6 A template form for the bank guarantee for the Deposit including parameters and terms required by the PURCHASER is provided in Supplement 8 of the CONTRACT.

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D. INTELLECTUAL PROPERTY

17. LICENSES AND RIGHTS OF USE TO TECHNICAL INFORMATION

- 17.1 For the purposes of the operation and maintenance of the WORK, as this consists of the individual tasks, procedures, and processes specified in the CONTRACT, and further for the purposes of repair, renovation, and modification of the WORK, the CONTRACTOR shall provide to the PURCHASER a non-exclusive, non-transferrable (excepting transfer to legal successors, including potential successors to ownership of the WORK), time-unlimited license valid in Czech Republic territory relating to patents or other industrial intangibles rights owned by the CONTRACTOR or by a third party by whom the CONTRACTOR is authorized to license such rights; the CONTRACTOR shall also grant to the PURCHASER a non-exclusive, non-transferrable (excepting transfer to legal successors, including potential successors to ownership of the WORK), time-unlimited right of use of know-how (if applicable) and other technical information provided to the PURCHASER under the CONTRACT, valid in Czech Republic territory. No provision contained in such documents may not be interpreted as the transfer of ownership of any patents, trademarks, copyrights, know-how, or other intellectual property rights from the CONTRACTOR or a third party to the PURCHASER if such a transfer would be outside the scope of the CONTRACT.
- 17.2 The fees for the provision licenses and rights specified in Section 17.1 are, in full, included of the CONTRACT PRICE.
- 17.3 The PURCHASER and the CONTRACTOR have agreed on the following scope expansion of the RIGHTS OF USE for documentation provided pursuant to Section 2 of Supplement 3 to the CONTRACT:
- (a) The PURCHASER may familiarize third parties with the documentation specified above, to the extent necessary and to the extent that such parties may provide repair, modification, maintenance, and / or operation services for systems included in the WORK pursuant to the CONTRACT.
 - (b) The PURCHASER shall not use the documentation specified above to repair, maintain, or operate systems owned by third parties, shall not manufacture new units of similar systems on behalf or for third parties, and shall not provide the documentation to third parties that would perform such activities on behalf or for other third parties.

18. INFORMATION AND CONTRACT DOCUMENTS SECURITY

- 18.1 Except for the provisions of Section 18.4 of the CONTRACT, each Party shall hold as confidential all commercial and technical information, including specifications, plans, drawings, patterns, etc., as well as other information and materials, provided to them by the other Party on papers (media) marked restricted-access or otherwise exchanged between the Parties during the execution of the CONTRACT; neither Party shall use such information for its financial or other benefit nor for the benefit of third parties, nor make such information accessible to third parties without the prior written permission of their counterparty in this CONTRACT, nor use such information and materials for any purpose other than to execute the CONTRACT. The requirement of permission shall be waived for provision of access to the SUBCONTRACTORS listed in Supplement 7 of the CONTRACT, provided such disclosure is limited to the extent necessary to that particular SUBCONTRACTOR's execution of the WORK.

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- 18.2 The obligation of confidentiality shall also be binding upon SUBCONTRACTORS and any third parties to whom the information specified in Section 18.1 of the CONTRACT may have been provided by the CONTRACTOR with the PURCHASER's approval and on the terms specified by this Section 18 of the CONTRACT. The CONTRACTOR shall ensure that such parties are bound by confidentiality at least to the same extent as the CONTRACTOR. The CONTRACTOR shall be liable for any SUBCONTRACTOR breaches of the obligation specified in this Section 18.2.
- 18.3 All documents listed in Section 18.1 of the CONTRACT, whether or not marked as restricted-access documents (media) by the PURCHASER, and excepting the CONTRACT itself, are the property of the PURCHASER and, if requested by the PURCHASER, all copies thereof shall be returned to the PURCHASER once the CONTRACTOR has executed the CONTRACT.
- 18.4 The PURCHASER and the CONTRACTOR each may, even without the other Party's approval, disclose information that the other Party has marked as restricted-access documents (media), to the extent necessary, if for the purposes of the CONTRACT:
- (a) Disclosure is required by public authorities, including financial or other authorities empowered to assess the WORK's compliance with general legislation;
 - (b) Disclosure is required for the activities of consultants or other parties involved in executing the CONTRACT; in such an event, the CONTRACTOR shall ensure that the parties in question are made aware of the confidentiality obligations set forth in this Section, and agree to be bound thereby.
- 18.5 The obligation to secure restricted-access documents (media) shall endure for a period specified by the Party having marked the documents (media) as restricted-access. In the event that the Party failed to specify such a period, the obligation to secure restricted-access documents (media) shall terminate automatically ten (10) years after the signing of the PROVISIONAL ACCEPTANCE Protocol for the WORK, unless a longer period is required by applicable legislation.
- 18.6 The information types listed below shall be excluded from the obligation to hold as confidential restricted-access documents (media):
- (a) Information that is or has become public knowledge, through no fault of the recipient
 - (b) Information legally obtained by the recipient from third parties not involved in the preparation and execution of the WORK
 - (c) Information such as is commonly given in business reference lists
 - (d) Information intended for publication, in the format and scope approved by the PURCHASER
- 18.7 In the performance of this CONTRACT, both Parties shall obtain personal data protected by Regulation (EU) 2016/679 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (hereinafter referred to as GDPR). Both Parties are therefore obliged to maintain confidentiality about all the facts the disclosure of which to a third party could cause harm to another party and to protect and develop the reputation and reputation of the other party, its owners and associates (family members, members company bodies, employees, etc.).
- 18.8 Neither Party may claim confidentiality in court / arbitration proceedings arising from or relating to the CONTRACT. This also includes proceedings before other public authorities, financial inspections, tax inspections, proceedings before European Union authorities, and provision of information to third parties bound by law to hold such information as confidential (e.g. auditors, attorneys).

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E. EXECUTION OF THE WORK

19. PARTIES' REPRESENTATIVES

19.1 PURCHASER'S REPRESENTATIVE

- 19.1.1 The PURCHASER'S REPRESENTATIVE is identified in Section 7.1-d of the CONTRACT. The PURCHASER shall notify the CONTRACTOR, without delay and in writing, if a different PURCHASER'S REPRESENTATIVE is assigned.

The PURCHASER'S REPRESENTATIVE shall represent the PURCHASER and act on the PURCHASER's behalf, in the scope given in the PURCHASER's Power of Attorney, throughout the duration of the CONTRACT, as well as communicate to the CONTRACTOR all notices, instructions, information, and other information exchanges pursuant to the CONTRACT from the PURCHASER.

All notices, instructions, information, and other exchanges pursuant to the CONTRACT from the CONTRACTOR to the PURCHASER shall be communicated to the PURCHASER'S REPRESENTATIVE, unless the CONTRACT specifies another recipient.

19.2 Contrator's Representative and Construction Manager (Construction Foreman)

- 19.2.1 The CONTRACTOR'S REPRESENTATIVE is identified in Section 7.1-e of the CONTRACT. The CONTRACTOR shall notify the CONTRACTOR, without delay and in writing, if a different CONTRACTOR'S REPRESENTATIVE is assigned.

- 19.2.2 The CONTRACTOR'S REPRESENTATIVE shall represent the CONTRACTOR and act on the CONTRACTOR's behalf. The PURCHASER shall interact with the CONTRACTOR'S REPRESENTATIVE on the good-faith assumption that the latter is authorized to make all decisions they are making on behalf of the CONTRACTOR. The CONTRACTOR'S REPRESENTATIVE communicates to the PURCHASER all notices, instructions, information, and other information exchanges pursuant to the CONTRACT from the CONTRACTOR.

All notices, instructions, information, and other exchanges pursuant to the CONTRACT from the PURCHASER to the CONTRACTOR shall be communicated to the CONTRACTOR'S REPRESENTATIVE, unless the CONTRACT specifies another recipient

- 19.2.3 The CONTRACTOR'S REPRESENTATIVE shall participate in all progress meetings pursuant to Section 20.3-c of the CONTRACT, unless the PURCHASER and the CONTRACTOR demonstrably agree otherwise.

- 19.2.4 No later than at the date of commencement of works at the SITE, the CONTRACTOR shall institute a Construction Office at the SITE and appoint a suitable staffer as the Construction Manager (i.e., the Construction Foreman in the sense of Act No. 183/2006, the Construction Act, as amended) responsible for operations at the SITE. The Construction Manager manages the construction of the WORK, supervises all CONTRACTOR WORKS at the SITE and shall be present at the site at all times during standard business hours (usually, 8 a.m. to 5 p.m.) throughout the duration of the CONTRACTOR's activities at the SITE, unless on leave, sick, or absent in relation to the execution of the CONTRACT. Whenever the Construction Manager is absent from the SITE, they shall be deputized for in full by their Deputy. The PURCHASER or their Representative shall submit all notices, instruction, information, and other information exchanges relating to the WORKS at the SITE to the Construction Manager or, if absent, to their Deputy. The Construction Manager shall be authorized to make all such decisions as may be required for the on-site management of the execution of the WORK, and shall participate in all progress meetings pursuant to Section 20.3-c of the CONTRACT, unless the PURCHASER and the CONTRACTOR demonstrably agree otherwise

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- 19.2.5 The PURCHASER may request the CONTRACTOR to replace any and all of the CONTRACTOR's personnel who demonstrate incompetence and / or gross negligence in the execution of their duties, or whose presence at the SITE is otherwise objectively unwelcome. Such CONTRACTOR personnel may not continue to be employed, or be re-employed, at the SITE without the PURCHASER's approval. Such replacement requests shall be made in writing and duly justified. The CONTRACTOR shall then carry out such requests without undue delay. The CONTRACTOR shall replace any and all personnel removed under this clause by other suitable personnel without undue delay. This provision shall apply equally to SUBCONTRACTOR personnel.

20. INFORMATION SUBMITTED TO PURCHASER

- 20.1 In preparing all documentation, i.e., drawings, specifications, calculations, protocols, lists, manuals, procedures, timetables, reports, etc. (hereinafter in this Section, "information") relating to the execution of the WORK, the CONTRACTOR shall employ all such knowledge, experience, diligence, and professional care as may be required for a properly-engineered WORK.
- 20.2 All such information submitted by the CONTRACTOR, or requested from the CONTRACTOR by the PURCHASER, for the PURCHASER's approval shall be prepared by the CONTRACTOR, at its own expense, and shall comply with the requirements of the CONTRACT. Excepting the provisions of Section 23.2 of the CONTRACT, the PURCHASER's approval, assessment, or consent to information provided by the CONTRACTOR shall not affect the CONTRACTOR's responsibility for the correctness and completeness of the information provided, nor of the obligation to comply in full with the CONTRACT. The CONTRACTOR may not modify or change information approved or consented to by the PURCHASER without a re-assessment of the modifications or changes by the PURCHASER. The PURCHASER's judgments as to the appropriateness and correctness of the information provided shall be final and binding upon the CONTRACTOR. All information provided by the CONTRACTOR for the PURCHASER's approval or consent pursuant to the CONTRACT shall be verified by the CONTRACTOR and marked as correct and adequate in view of the GOODS and RIGHTS OF USE to be supplied and the WORKS and SERVICES to be rendered by the CONTRACTOR. Unless agreed otherwise, all information provided to the PURCHASER shall be in the Czech language.
- 20.3 Progress reports on the WORK

The CONTRACTOR shall keep the PURCHASER informed of its activities and progress in relation to the WORK. To that end, the CONTRACTOR shall prepare and submit periodic Progress Reports, whose basic contents, format, number, timetable, and frequency is specified below in this Section 20.3 of the CONTRACT. The PURCHASER may, if justified, request modification or expansion of this basic scope of contents, format, number, timetable, and / or frequency, in which event the CONTRACTOR shall comply with such requests without it affecting the CONTRACT PRICE. The manner and format in which WORK Progress Reports are to be made shall be further agreed by the Parties in the Administration Rules.

The reports described in this Section 20.3 of the CONTRACT shall serve to inform the PURCHASER of the CONTRACTOR's progress. The CONTRACTOR shall submit particularly the following:

- (a) Daily report (Construction Log)

The CONTRACTOR shall prepare daily reports in the form of entries in the Construction Log kept at the SITE, detailing the WORKS done during the preceding DAY. Pursuant to applicable legislation, the Construction Log shall begin on the day

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the CONTRACTOR accepts custody of the SITE and end on the day of WORK FINAL ACCEPTANCE, where daily reporting shall be required until the date of WORK PROVISIONAL ACCEPTANCE, and on an as-needed basis thereafter. After the WORK PROVISIONAL ACCEPTANCE date, the Construction Log shall be kept at the PURCHASER's registered address. Construction Log entries may not be used to initiate or execute CHANGES pursuant to the CONTRACT in matters of the subject, price, quality, or timetable of the WORK. Individual daily entries shall be made in the Construction Log by the CONTRACTOR'S REPRESENTATIVE or the Construction Manager (Construction Foreman).

(b) MONTHLY Report

The CONTRACTOR shall prepare and submit to the PURCHASER, no later than on the fifth (5th) business day of the following MONTH, a MONTHLY Report for the past MONTH summarizing the extent of works done and progress made over that MONTH (i.e., deliveries of WORKS, GOODS, SERVICES, and / or RIGHTS OF USE). MONTHLY Reports shall contain, at minimum:

- (i) Overview of the state of progress on engineering and design work detailing activities performed over the MONTH in question
- (ii) Overview comparing actual progress on the WORK to progress planned, i.e., comparing the actual state of progress on the WORK to the Timetable and Execution Plan for the WORK and the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT
- (iii) Overview of planned activities (i.e., deliveries of WORKS, GOODS, SERVICES, and / or RIGHTS OF USE) of the CONTRACTOR for the following MONTH
- (iv) List of CHANGES made, including list and status of change proceedings pursuant to Section 51 of the CONTRACT
- (v) List of invoices issued and payments received by the CONTRACTOR
- (vi) List of any major non-conformities, including their potential impact on the execution of the CONTRACT and details of remedial measures taken. Particular attention shall be given to areas in which the CONTRACTOR is or might become delayed in the meeting of the key WORK execution milestones as given in Section 10.1 of the CONTRACT.
- (vii) Any other documents the PURCHASER and CONTRACTOR may agree on

(c) Progress Meetings

The PURCHASER and the CONTRACTOR shall meet at certain times specified by the PURCHASER to discuss the state of the CONTRACTOR's progress in the execution of the CONTRACT. The CONTRACTOR'S REPRESENTATIVE shall participate in such meetings, as shall, if pertinent, the Construction Manager and any other CONTRACTOR staff who may have relevant contributions. These meetings shall cover the state of progress on the WORK, plans and proposals for future activities, the labor situation, engineering progress, Occupational Health and Safety concerns, supplies of equipment and materials, current and expected difficulties, any coordination in executing the WORK that may be required, change proceedings, and any other topics that may be pertinent. The CONTRACTOR shall maintain a record of the proceedings, which both Parties shall approve and sign at the end of the meeting to which the report pertains.

Progress Meetings shall take place once a month until the CONTRACTOR's acceptance of custody of the SITE, and once a week thereafter, always at the PURCHASER's offices, unless agreed otherwise. If required, other, extraordinary

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meetings may take place. The time and place for such extraordinary meetings shall be agreed individually and with regard to the topic.

(d) Milestone Report

Upon the completion of each of the milestones given in the Roadmap of Key WORK Milestones and Prices contained in Supplement 10 of the CONTRACT, the CONTRACTOR shall prepare and submit to the PURCHASER a Milestone Report, containing, at minimum:

- (i) List of WORKS, GOODS, RIGHTS OF USE, and SERVICES provided in the completion of the milestone in question
- (ii) Assessment of milestone completion and meeting of conditions for the associated payment
- (iii) Comparison of milestone completion time against the Timetable and Execution Plan for the WORK and the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT
- (iv) Any other documents the PURCHASER and CONTRACTOR may agree on

The PURCHASER shall, within seven (7) business days from the receipt of a Milestone Report from the CONTRACTOR, unless agreed otherwise, either sign off on the Milestone Report, or else give, in writing, its reasons for not doing so.

In the event that the PURCHASER, within the above mentioned period of seven (7) business days, fails to both sign off on a milestone report and give the CONTRACTOR in writing its reasons for not doing so, then that Milestone Report shall be considered signed and approved, and the CONTRACTOR shall be entitled to invoice the payment due to it for the milestone in question.

21. SUBCONTRACTING

- 21.1 The list of approved SUBCONTRACTORS for principal WORKS, SERVICES, and GOODS deliveries is part of Supplement 7 to the CONTRACT. The CONTRACTOR may propose amendments and deletions to this list as it sees fit. The CONTRACTOR shall provide such changes to the PURCHASER for approval, in writing. All such changes shall be submitted in a timely manner so as not to delay to the WORK. No changes are valid without the PURCHASER's prior written approval. The PURCHASER shall not withhold such approval without cause. In the event the PURCHASER fails to make a statement on a proposed change within seven (7) days of receipt, that change shall be considered approved.
- 21.2 The PURCHASER reserves the right to refuse any SUBCONTRACTORS of WORKS, SERVICES, and GOODS who are not listed in Supplement 7 to the CONTRACT and who, in the PURCHASER's opinion, lack sufficient skill and experience on similar projects, or who, to the PURCHASER's knowledge, have a history of not fulfilling obligations, or whose financial and technological position is, in the PURCHASER's opinion, insufficient to adequately guarantee the fulfillment of the obligations under the CONTRACT considered for that SUBCONTRACTOR. In that event, however, the PURCHASER shall provide due justification for its refusal of such a SUBCONTRACTOR to the CONTRACTOR, in writing.
- 21.3 The CONTRACTOR shall notify the PURCHASER of any SUBCONTRACTOR agreements it has entered into within ten (10) days of entering into such agreements.
- 21.4 The PURCHASER's approval of a SUBCONTRACTOR and / or the execution of the WORK or a part thereof by a SUBCONTRACTOR does not in any way affect the CONTRACTOR's obligations and duties under the CONTRACT; the CONTRACTOR bears responsibility for the work of its SUBCONTRACTORS as if it were the CONTRACTOR's own.

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- 21.5 The PURCHASER may refuse to take delivery of GOODS, RIGHTS OF USE, WORKS, and / or SERVICES delivered via a SUBCONTRACTOR not meeting the requirements of this Section 21 of the CONTRACT.
- 21.6 The CONTRACTOR shall ensure that all its subcontracts contain explicit provisions to the effect that the CONTRACTOR is authorized to assign its rights and obligations in such subcontracts to the PURCHASER or a third party in a manner that would make the SUBCONTRACTOR a direct contractor of the PURCHASER or a third party of the PURCHASER's choosing, particularly in situations described in the CONTRACT (Section 53.2.2). Furthermore, the CONTRACTOR shall ensure that its subcontracts contain provisions and obligations binding upon the SUBCONTRACTORS equivalent to the provisions and obligations binding upon the CONTRACTOR under the CONTRACT. The CONTRACTOR shall, upon the PURCHASER's request, demonstrate to the PURCHASER that its subcontracts contain such provisions.
- 21.7 In the event that the CONTRACTOR, pursuant to Section 21.1 of the CONTRACT, proposes a change of SUBCONTRACTOR to the PURCHASER affecting a SUBCONTRACTOR through which the CONTRACTOR demonstrated fitness to qualify for the procurement process for the WORK, the CONTRACTOR shall demonstrate to the PURCHASER that, after the change of SUBCONTRACTOR, the CONTRACTOR shall remain qualified as per the PURCHASER's requirements given in the procurement process for the WORK, in the extent that the CONTRACTOR's qualifications may have been demonstrated through the SUBCONTRACTOR being replaced, such demonstration to be made in the same manner that was required in the procurement process for the WORK. This does not affect the provisions of Section 21.2 of the CONTRACT.

22. STANDARDS AND LEGISLATION

- 22.1 The CONTRACTOR shall comply with all of the following:
- (i) General legislation of the Czech Republic, as in effect at the time; and
 - (ii) CSN standards, as in effect at the time, as well as harmonized CSN EN and CSN EN ISO standards, i.e., standards relevant to the WORK incorporating in full the requirements of common European standards or of harmonization acts approved by the authorities of the European Union as harmonized European standards, or European standards enacted as harmonized pursuant to the law of the European Union by agreement of notified parties, unless expressly stated otherwise; and
 - (iii) The PURCHASER's internal guideline "Supplier Rules", which has been included in Supplement 11 of the CONTRACT
- 22.2 The use of foreign national or international standards shall only be allowed if the requirements of such standards are at least as stringent as those of standards in effect in the Czech Republic, and with the PURCHASER's prior approval. Should the CONTRACTOR wish to use a foreign standard with no direct equivalent CSN, CSN EN, or CSN EN ISO standard, the CONTRACTOR shall provide the text of the standard to the PURCHASER, in both its original language and certified Czech translation, along with the documentation affected by the standard, for the PURCHASER's approval, unless the Parties agree on another procedure.
- 22.3 The CONTRACTOR shall provide to the PURCHASER, in order to demonstrate its compliance with the requirements of general legislation, mandatory standards, and the WORK's quality assurance program, the relevant documentation pursuant to this Section, no later than ten (10) days before the commencement of the COMPLEX TESTS pursuant to Section 29.2 of the CONTRACT, unless the CONTRACT specifies an earlier deadline or the Parties agree otherwise.

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- 22.4 The PURCHASER may refuse to accept a WORK not compliant with the requirements of this Section 22 of the CONTRACT, in which event the CONTRACTOR shall, at its own expense, ensure the WORK's compliance with this Section 22 of the CONTRACT.
- 22.5 None of the provisions of this Section 22 of the CONTRACT shall relieve the CONTRACTOR of responsibility for inspections, testing, quality, warranty, or any other obligations under the CONTRACT, nor entitle the CONTRACTOR to an increase in the CONTRACT PRICE or an extension in the timetable agreed in the CONTRACT.

23. ENGINEERING WORK, DOCUMENTATION

- 23.1 The CONTRACTOR shall perform design and engineering WORKS in accordance with the CONTRACT or, if the CONTRACT does not provide for the matter at hand, in accordance with relevant general legislation and standards as specified in Section 22.1 of the CONTRACT and with engineering best practice. The CONTRACTOR shall be liable for any non-conformities, errors, and omissions that may occur in the specifications, drawings, and other technical documentation prepared by the same, whether or not such specifications, drawings, or other documentation have been approved by the PURCHASER, provided that such non-conformities, errors, or omissions are not the result of faulty information provided to the CONTRACTOR, in writing, by the PURCHASER or in the PURCHASER's name, such shortcomings of the information having been fruitlessly pointed out by the CONTRACTOR in the sense of Section 23.2 of the CONTRACT.
- 23.2 The CONTRACTOR shall not be liable for the consequences of incorrect instructions or information provided by the PURCHASER or in the PURCHASER's name, provided that the CONTRACTOR gave the PURCHASER clear and demonstrable notice of the shortcomings of such instructions or information, in writing and without undue delay but no later than ten (10) business days from its receipt, and that the PURCHASER insisted in spite of such notice on the execution of such instructions and / or the use of such information, or that alternatively the CONTRACTOR was not allowed to ascertain the correctness of such instructions or information despite its written request for the same. The Parties have agreed to exclude their legal relationship under this CONTRACT from applicability of the provisions of Section 2594, Subsections 2, 3, and 4 (on *CONTRACTOR Notification of PURCHASER*), and of Section 2595 (on *Faulty PURCHASER Instructions, CONTRACTOR Withdrawal*) of the Czech Civil Code.
- 23.3 Scope, format, language, quantity, approval procedure, and other requirements on documentation are listed in Supplement 3 to the CONTRACT. The CONTRACTOR shall prepare and submit to the PURCHASER all documentation required by Supplement 3 to the CONTRACT. The costs of preparation, including materials and submission, shall be borne by the CONTRACTOR and part of the CONTRACT PRICE.
- 23.4 In the event that the CONTRACTOR, with the PURCHASER's prior approval, uses a different digital file format for documents provided under this CONTRACT than required in the same, the CONTRACTOR shall, at its own expense and without delay, provide to the PURCHASER any licenses that may be required, in the quantity necessary for the number of users agreed, including user manuals and, if required, training of the PURCHASER personnel in question on the use of such formats.
- 23.5 Pursuant to the QUALITY PLAN, the CONTRACTOR shall provide the PURCHASER with copies of all documentation prepared exclusively in relation to the WORK, for the purposes of the PURCHASER's approval of the CONTRACTOR's activities in supply, manufacture, shipping, assembly, installation, construction, and / or COMMISSIONING.
- 23.6 The procedure for documentation submission and approval shall be as specified in Supplement 3 to the CONTRACT. The PURCHASER's approval or inspection of the

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documentation provided by the CONTRACTOR, whether with or without modifications, does in no way relieve the CONTRACTOR of responsibility for any faults with the documentation or of any of its obligations under the CONTRACT.

- 23.7 The CONTRACTOR shall be liable for and bear all costs of any and all damages that may arise from its provision of any GOODS and / or execution of any part of the WORK before receiving the PURCHASER's approval.

24. EXECUTION OF THE WORK

- 24.1 The WORK shall be executed in accordance with the provisions of the CONTRACT, particularly, on the timetable given in Section 10 of the CONTRACT and in accordance with the Timetable and Execution Plan for the WORK and the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT, and in accordance with the QUALITY PLAN.
- 24.2 The CONTRACTOR shall submit for the PURCHASER assessment, along with the DOCUMENTATION FOR EXECUTION OF THE PROJECT, the Detailed Timetable and Execution Plan for the WORK. This Detailed Timetable and Execution Plan shall illustrate, in detail, the CONTRACTOR's and its SUBCONTRACTORS' plans for execution of the WORK, shall comply with the deadlines given in Section 10 of the CONTRACT and the milestones given in the Timetable and Execution Plan for the WORK, and shall not cause conflict with works performed by the PURCHASER or by parties authorized by the PURCHASER. Once the PURCHASER has approved the Detailed Timetable and Execution Plan for the WORK, it shall become a binding contract and shall replace the Timetable and Execution Plan for the WORK specified in Supplement 4 of the CONTRACT. Until such time as the Detailed Timetable and Execution Plan for the WORK has been approved, the Timetable and Execution Plan for the WORK given in Supplement 4 to the CONTRACT remains in effect.
- 24.3 The WORK is to be executed while the Teplárna Komořany (TKY) heating plant continues full operation. Should any works be required that may only be performed while the PURCHASER's systems are offline, but where TKY as such may remain in operation, such works shall be performed during a shutdown period chosen by the PURCHASER, based on consultation with the CONTRACTOR and the PURCHASER's operational exigencies. The CONTRACTOR shall submit to the PURCHASER any requests to shut down PURCHASER systems no later than 90 DAYS before the date on which shutdown is requested to commence, unless the Parties demonstrably agree otherwise.
- 24.4 The PURCHASER shall inform the CONTRACTOR of the date of system shutdown pursuant to Section 24.3 of the CONTRACT no later than seven (7) DAYS before the shutdown date. The CONTRACTOR shall consider the PURCHASER's notice final.
- 24.5 The CONTRACTOR may not commence manufacturing and execution of the WORK before receiving written approval on the relevant DOCUMENTATION FOR EXECUTION OF THE PROJECT from the PURCHASER and the depositing of such documentation with the PURCHASER, unless the Parties demonstrably agree otherwise. Any delay in the execution of the WORK due to the CONTRACTOR's inability to commence works at the SITE for reasons of the CONTRACTOR's failure to deposit the approved DOCUMENTATION FOR EXECUTION OF THE PROJECT with the PURCHASER, shall be the responsibility of the CONTRACTOR.
- 24.6 The CONTRACTOR shall prepare execution timetables for activities relating to COMMISSIONING, which shall contain a disaggregated listing of the activities given in the Detailed Timetable and Execution Plan for the WORK. The COMMISSIONING execution timetables shall use hours as the unit of time and shall be submitted to the PURCHASER for approval no later than ninety (90) DAYS before the COMMISSIONING commencement date.

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The COMMISSIONING execution timetables shall describe each activity in a level of detail no lesser than that found in the Detailed Timetable and Execution Plan for the WORK. If requested by the PURCHASER, the information in the COMMISSIONING execution timetables shall be amended to include further required data (e.g. resources, assignment of responsibility, etc.).

- 24.7 Before commencing assembly of the WORK, the PURCHASER and the CONTRACTOR shall sign an Assembly Readiness Protocol. The drafting of the Protocol shall be the responsibility of the CONTRACTOR. In the event that the PURCHASER refuses to sign the Assembly Readiness Protocol, the PURCHASER shall inform the CONTRACTOR of its reasons for doing so within five (5) DAYS of receipt of the draft Protocol. Should the PURCHASER, within five (5) DAYS of receipt, fail to both sign the Protocol and give the CONTRACTOR in writing its reasons for not doing so, then the Protocol shall be considered signed on the date of the PURCHASER's receipt of the draft. The Assembly Readiness Protocol shall in particular contain:
- (a) Attestation of the PURCHASER's approval of the documentation required to commence assembly
 - (b) Attestation to the effect that all equipment and components required to commence assembly have been delivered to the SITE and duly tested in accordance with the QUALITY PLAN
 - (c) Attestation of the PURCHASER's approval of the QUALITY PLAN for assembly works
 - (d) Attestation to the effect that all staff participating in works covered by the Protocol have been adequately briefed on all regulations relevant to the execution of the CONTRACT
- 24.8 The CONTRACTOR shall, throughout the execution of the WORK, monitor and document the progress of all deliveries and activities with regard to the conditions and timetable agreed in the Timetable and Execution Plan for the WORK (Supplement 5 to the CONTRACT) and the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT.

25. DELIVERY AND DOCUMENTATION

- 25.1 All documents relating to the delivery of GOODS, RIGHTS OF USE, materials, and SERVICES to the SITE from outside the Czech Republic (i.e., customs, insurance, transit, tax, origin, etc. documents) shall be procured, handled, and tracked by the CONTRACTOR.
- 25.2 The CONTRACTOR shall deliver to the SITE all GOODS, materials, and WORK components sourced in the Czech Republic, including any and all taxes, insurance, shipping, and other costs, as well as licenses, approvals, etc. relating to the delivery of GOODS to the intended destination. Documents relating to the delivery of GOODS to the SITE (insurance, shipping, tax, etc.) shall be procured, handled, and tracked by the CONTRACTOR.
- 25.3 All commenced deliveries of GOODS shall be reported by the CONTRACTOR to the PURCHASER via e-mail, including the description of the GOODS, the delivery location, the shipping method, and the estimated time to arrival at the SITE; the PURCHASER should have this information no later than three (3) business days before the GOODS are due at the SITE. In the event that the PURCHASER does not receive such information by the time given above, the CONTRACTOR shall be liable for any and all consequences, including demonstrable costs, arising to the PURCHASER as a result, and shall reimburse the PURCHASER for such costs without delay.

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26. SHIPPING, PACKAGING INSTRUCTIONS

- 26.1 The CONTRACTOR shall, at its own risk and expense, ship to the SITE all relevant GOODS, utilizing such shipping methods as it considers suitable given the goods being shipped.
- 26.2 All deliveries under the CONTRACT shall be duly and carefully packaged in accordance with manufacturer instructions and with regard to the nature of the GOODS in question, in packaging suitable for long-distance shipping and loading and offloading, so as to prevent damage during transit and storage. The CONTRACTOR shall ensure thermal and mechanical insulation is included such as can adequately prevent damage by water, rain, collision, and corrosion, as appropriate given the nature of the equipment, in order to ensure the safe shipping of GOODS to the SITE.
- 26.3 The CONTRACTOR shall mark all transit packaging with the project name, "Environmental Improvements on TKY II Heating Plant - Wet Desulfurization – recipient: [add contractor name], CONTRACTOR".

27. WORK QUALITY ASSURANCE

- 27.1 The CONTRACTOR shall ensure that the WORK, including all related activities of the CONTRACTOR and its SUBCONTRACTORS at all levels, is executed at the level of quality required by the CONTRACT, as set out particularly in this Section 27 of the CONTRACT, Supplement 3 to the CONTRACT, Czech Republic general legislation, and the QUALITY PLAN and Inspection and Test Plan as approved by the PURCHASER.
- 27.2 Throughout the duration of the CONTRACT, the CONTRACTOR shall submit to the PURCHASER all documentation required by the QUALITY PLAN and requested by the PURCHASER.
- 27.3 The quality aspects of the WORK's execution pursuant to the CONTRACT shall be governed by the QUALITY PLAN and the CONTRACTOR's Inspection and Test Plan, including any amendments to the latter in accordance with the CONTRACT. The QUALITY PLAN and the Inspection and Test Plan for the execution of the WORK pursuant to the CONTRACT shall be prepared by the CONTRACTOR and submitted to the PURCHASER for approval in the scope and on the timetable given in Supplement 3 to the CONTRACT. The PURCHASER shall not deny approval of the QUALITY PLAN and / or the Inspection and Test Plan without reason, and shall strive to give approval as soon as possible after receiving the CONTRACTOR's draft. Should the PURCHASER, within fourteen (14) days of receipt, fail to both approve the draft QUALITY PLAN and / or the draft Inspection and Test Plan, and to give the CONTRACTOR its reasons and / or change requests, then the QUALITY PLAN and / or Inspection and Test Plan shall be considered approved.
- 27.4 All inspections and testing performed in relation to the preparation and execution of the WORK by the CONTRACTOR and / or its SUBCONTRACTORS shall be performed in accordance with the Inspection and Test Plan and related documentation, and in accordance with the CONTRACT.
- 27.5 The QUALITY PLAN and Inspection and Test Plan may be amended via documented, PURCHASER-approved revisions.
- 27.6 During the execution of the CONTRACT, the CONTRACTOR shall amend the QUALITY PLAN and Inspection and Test Plan within thirty (30) days of the PURCHASER's request in the event of changes in:
- (i) General legislation requirements; or
 - (ii) Internal PURCHASER regulations; or

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- (iii) Public oversight and administration requirements; or
- (iv) Should inspection results mandate remedial and / or preventive measures; or
- (v) Based on other PURCHASER requirements in accordance with the CONTRACT

In the event that the reasons for such changes are not attributable to the CONTRACTOR and the changes are material to the execution of the WORK, the Parties shall commence consultations pursuant to Section 51 of the CONTRACT, unless agreed otherwise.

- 27.7 The PURCHASER-approved QUALITY PLAN and Inspection and Test Plans governing the quality-related activities on the WORK shall be amended by the CONTRACTOR and re-submitted for the PURCHASER's approval in the event that the CONTRACTOR wishes to make a change of any kind, particularly changes in the sequence, contents, and / or methods of inspections and / or tests, including for reasons of the non-compliance of the sequence, contents, and / or methods of inspections and tests with the Timetable and Execution Plan for the WORK, the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT, or the scope of the WORK itself. The PURCHASER's approval, or lack thereof, of QUALITY PLAN and Inspection and Test Plan revisions proposed by the CONTRACTOR does not relieve the CONTRACTOR of responsibility for inspections and testing and the due execution of the WORK pursuant to the CONTRACT. Existing versions of the QUALITY PLAN and Inspection and Test Plan remain in effect and binding upon the CONTRACTOR until such time as the PURCHASER may approve a revision.
- 27.8 In the event that the PURCHASER becomes aware that the version of the QUALITY PLAN and / or Inspection and Test Plan currently in effect does not conform to the CONTRACT, the CONTRACTOR shall, within a reasonable timeframe specified by the PURCHASER, prepare and submit to the PURCHASER for approval a new revision of the QUALITY PLAN and / or Inspection and Test Plan compliant with the CONTRACT. All expenses relating to QUALITY PLAN and Inspection and Test Plan revisions under this Section 27.8 shall be borne by the CONTRACTOR.
- 27.9 Throughout the execution of the CONTRACT, the CONTRACTOR shall allow the PURCHASER or its representatives, without delay, to perform an audit of the quality management system and to inspect and test the WORK or any part thereof, including GOODS, WORKS, SERVICES, RIGHTS OF USE, drawings, and documentation, so that the PURCHASER may satisfy itself that these conform to the CONTRACT.
- 27.10 Tests and inspections may be performed at the CONTRACTOR, at its SUBCONTRACTORS, at manufacturer facilities, and at the SITE.
- 27.11 Whenever the CONTRACTOR is ready to perform such tests and inspections as are specified in the Inspection and Test Plan and marked "W" (Witness Point, i.e., a test or inspection requiring the PURCHASER to bear witness), the CONTRACTOR shall, in reasonable advance but no later than fourteen (14) days in advance, send by fax, e-mail or registered post a notice to the PURCHASER of the test or inspection and the time and place of its performance. The CONTRACTOR shall obtain from its SUBCONTRACTORS or any third parties or manufacturers involved all permissions and consents required to enable the PURCHASER's representatives to attend the test or inspection.
- 27.12 Results, protocol, and certificates attesting that a test or inspection has been performed shall be filed in the "Inspection and Test Book", which shall be submitted to the PURCHASER no later than five (5) days before the expected WORK PROVISIONAL ACCEPTANCE date, pursuant to Section 30 of the CONTRACT.
- 27.13 The CONTRACTOR shall provide to the PURCHASER all protocols relating to the results of any such tests and inspections. In the event that the PURCHASER's representative fails to attend a test or inspection where their attendance is required, the CONTRACTOR may

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perform the test or inspection without the PURCHASER's participation, in which case the CONTRACTOR shall submit for the PURCHASER's assessment, within three (3) business days, the protocols summarizing the results. If the test or inspection in question is a Hold Point as these are defined in the Inspection and Test Plan, the CONTRACTOR shall wait for the PURCHASER's representative no less than twenty-four (24) hours from the agreed time of the test or inspection, unless the Parties agree otherwise.

- 27.14 The PURCHASER may attend tests and inspections by sending a representative. Costs and expenses related to such attendance, such as travel and room and board expenses, shall be borne by the PURCHASER. In the event that the test or inspection results in a failure for reasons attributable to the CONTRACTOR, the CONTRACTOR shall reimburse the PURCHASER for all demonstrated and reasonable expenses related to the PURCHASER's representative's attendance of the test or inspection. The PURCHASER may invoice the CONTRACTOR for costs related to attendance at a failed test or inspection at any point after that test or inspection, or may set off such costs against its financial liabilities vis-à-vis the CONTRACTOR in any of its payments to the same.
- 27.15 In exceptional cases, the CONTRACTOR shall allow the PURCHASER to perform tests and inspections of any kind that are not included in the Inspection and Test Plan, provided that:
- (i) Such a test or inspection does not jeopardize progress on the WORK, does not impact the proper functioning of the WORK part being tested or inspected, and does not compromise the CONTRACTOR's performance of the CONTRACT. Should the CONTRACTOR deem a test or inspection to jeopardize progress on the WORK, impact the proper functioning of the WORK part being tested or inspected, or compromise the CONTRACTOR's performance of the CONTRACT, the CONTRACTOR shall demonstrate this to the PURCHASER without delay. If the PURCHASER then insists on performing the test or inspection regardless, any impact on the performance of the CONTRACT shall be handled pursuant to Section 51 of the CONTRACT, the CONTRACTOR shall be relieved of responsibility for potential damages; and
 - (ii) The CONTRACTOR shall be reimbursed by the PURCHASER for all demonstrated and reasonable expenses resulting from the performance of such a test or inspection; and
 - (iii) The PURCHASER shall request the CONTRACTOR to perform such a test or inspection no fewer than 10 business days in advance; and
 - (iv) The PURCHASER shall provide the CONTRACTOR with all relevant inspection and background documents no fewer than 5 business days in advance.
- 27.16 For the purposes of monitoring of the progress of WORKS at the SITE / assembly sites and the PURCHASER's technical supervision, the CONTRACTOR shall allow the PURCHASER, during standard work hours, access to the SITE / assembly site at any time and without written notice; outside standard work hours, the CONTRACTOR shall make all reasonable effort to allow the same. As part of its technical supervision, the PURCHASER may in particular monitor compliance of the WORKS with the CONTRACT, the DESIGN, and applicable technical standards and other legislation. The PURCHASER may note any issues found with the WORKS monitored in the Construction Log. The CONTRACTOR shall ensure that its authorized staff are present during the PURCHASER's technical supervision of deliveries and WORKS, and that measures to remedy any issues pointed out are taken without delay. The PURCHASER's technical supervisors may order CONTRACTOR (and / or SUBCONTRACTOR) personnel to interrupt the WORKS if the CONTRACTOR's REPRESENTATIVE cannot be reached and continuation of the WORKS would jeopardize the safety, life, or limb of construction personnel and / or threaten major material damage.

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- 27.17 The CONTRACTOR shall lend to the PURCHASER or its representative, free of charge, all required gear, equipment, measurement and test devices, media, etc., as well as provide due cooperation including access to drawings and production data, to the extent that this may be required for the PURCHASER to effectively participate in planned tests and inspections marked "W" or "H" in the Inspection and Test Plan. As regards gear, equipment, measurement and test devices, and media, the CONTRACTOR shall be required to provide these per the above only if such gear, equipment, measurement and test devices, and media are available to the CONTRACTOR directly at the site of the test or inspection in question. The PURCHASER shall be held liable for any damage to the gear, equipment, and measurement and test devices borrowed from the CONTRACTOR.
- 27.18 In the event that any test or inspection fails for reasons not attributable to the PURCHASER, the CONTRACTOR shall make all modifications (changes) required to meet the criteria specified, free of charge. The costs of repeated tests and inspections of such newly re-delivered or repaired portions of the WORK shall be borne by the CONTRACTOR. The CONTRACTOR shall also bear all costs and expenses that may arise to the PURCHASER in relation to a repeated test or inspection marked "W" or "H" in the Inspection and Test Plan.
- 27.19 No part of the WORK may be made inaccessible from the SITE before the tests and inspections required for the part by the CONTRACT and the Inspection and Test Plan are performed. The CONTRACTOR shall notify the PURCHASER, in sufficient advance but no fewer than three (3) business days in advance (unless agreed otherwise), of the date at which any such parts of the WORK to be later made inaccessible shall be ready for the inspections and tests required by the Inspection and Test Plan and marked "W" or "H". Such tests and inspections shall be performed by the CONTRACTOR, with the PURCHASER attending. The CONTRACTOR and the PURCHASER shall sign a protocol specifying the results of the test or inspection and clearing that part of the WORK to be made inaccessible. In the event that the PURCHASER fails to attend a test or inspection to which it had been duly invited per the above, the CONTRACTOR may carry on with the WORK pursuant to the CONTRACT.
- 27.20 In the event the CONTRACTOR makes a part of the WORK inaccessible without enabling the testing or inspections that may be required under the CONTRACT, the CONTRACTOR shall, at its own expense, make that part of the WORK accessible in a manner sufficient to perform the test or inspection.
- 27.21 Any WORKS or SERVICES to be performed by the CONTRACTOR and any replacements or repairs to any part of the WORK, including GOODS, that may result from tests and inspections or failures thereof as described in this Section 27 of the CONTRACT, do not constitute a change to the WORK, and the CONTRACTOR shall not, in the event, be entitled to any revisions of the QUALITY PLAN, CONTRACT PRICE, or the Timetable and Execution Plan for the WORK. Any and all costs relating to such SERVICES, WORKS, GOODS, and RIGHTS OF USE shall be borne by the CONTRACTOR, including costs of repeated testing and inspections and costs related thereto.
- 27.22 The determination, specification, and approval of quality requirements on SUBCONTRACTORS are the responsibility of the CONTRACTOR. Therefore, the CONTRACTOR shall ensure that its subcontracts require its SUBCONTRACTORS to follow quality plans, inspection and test plans, and supplier inspection plans drafted by the CONTRACTOR and consistent with the QUALITY PLAN agreed to by the CONTRACTOR in the CONTRACT.
- 27.23 Unless provided otherwise elsewhere in the CONTRACT, all inspections and testing, including related activities, pursuant to this Section 27 of the CONTRACT shall be performed by the CONTRACTOR, and all costs relating to such tests and inspections, including costs of replacement for any parts destroyed in testing, shall be borne by the

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- 27.24 Nothing in this Section 27 of the CONTRACT relieves the CONTRACTOR of any part of its responsibility for the execution and quality of the WORK, for guarantees, or any of its other obligations under the CONTRACT.

28. ASSEMBLY AND MECHANICAL COMPLETION

- 28.1 The CONTRACTOR shall assemble the WORK in accordance with the CONTRACT, particularly with the DOCUMENTATION FOR EXECUTION OF THE PROJECT, the QUALITY PLAN, and the Inspection and Test Plan.
- 28.2 Assembly of the WORK shall commence upon the signing of the Assembly Readiness Protocol by the PURCHASER and the CONTRACTOR pursuant to Section 24.7 of the CONTRACT, and shall be governed by the terms and timetables given in the Timetable and Execution Plan for the WORK and the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT.
- 28.3 Mechanical Completion of the WORK constitutes an achievement of a state of the WORK's parts, in terms of assembly works, such that COMMISSIONING may begin. As soon as, in the CONTRACTOR's view, a system is mechanically and structurally complete and clean, the CONTRACTOR shall notify the PURCHASER in writing to that effect. Assembly also includes individual tests provided for in the CONTRACTOR's QUALITY PLAN and Inspection and Test Plan pursuant to Section 27 of the CONTRACT. The primary goal of individual tests is to verify that the system in question has been assembled correctly and its manufacturing and assembly documentation is complete, without using operating media or permanent electrical connections.
- 28.4 The completion of individual tests shall be demonstrated by the relevant attestations and protocols from tests and inspections, issued pursuant to the Inspection and Test Plan, which the CONTRACTOR shall prepare and submit to the PURCHASER.
- 28.5 Once all individual tests have been successfully completed, the PURCHASER and the CONTRACTOR shall, without undue delay, sign the MECHANICAL COMPLETION Protocol for the WORK, on the basis of which preparations for the COMMISSIONING of the WORK may begin. The drafting of the Protocol shall be the responsibility of the CONTRACTOR.
- 28.6 Should the PURCHASER refuse to sign the MECHANICAL COMPLETION Protocol pursuant to Section 29.5 of the CONTRACT, the PURCHASER shall notify the CONTRACTOR, in writing and no later than five (5) business days from the receipt of the draft Protocol, of the defects and / or incomplete works that, in the PURCHASER's view, prevent the start of COMMISSIONING and are attributable to the CONTRACTOR. The CONTRACTOR shall then remedy such defects and / or incomplete works and subsequently repeat the procedure given in Section 28.3 and 28.4 of the CONTRACT.
- 28.7 Should the PURCHASER, within five (5) business days of receipt, fail to both sign the Protocol and inform the CONTRACTOR in writing of defects and / or incomplete works preventing the start of COMMISSIONING, then the WORK shall be considered MECHANICALLY COMPLETE on the date of the PURCHASER's receipt of the draft Protocol.

29. COMMISSIONING

Once MECHANICAL COMPLETION of the WORK has been achieved and individual tests pursuant to Section 28 of the CONTRACT performed, the CONTRACTOR shall commence COMMISSIONING. COMMISSIONING entails the following:

- (a) Preparation for COMPLEX TESTS

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(b) COMPLEX TESTS, TEST "A"

(c) PERFORMANCE TEST.

The CONTRACTOR shall begin preparing individual systems for COMPLEX TESTS gradually, so that individual functional systems and operating systems are brought online until the entire WORK is commissioned. The COMPLEX TESTS and PERFORMANCE TEST need to be performed on the WORK as a whole.

The CONTRACTOR shall COMMISSION the work in accordance with the Timetable and Execution plan for the WORK (Supplement 4 to the CONTRACT) and the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT. COMMISSIONING shall take place during standard work hours, unless the Parties agree otherwise. The CONTRACTOR shall ensure the continuous presence of its authorized staff, the CONTRACTOR'S REPRESENTATIVE, or the Construction Manager at the SITE throughout COMMISSIONING activities so as to ensure reliable and safe operation, the performance of any repairs and procurement of any replacement parts that may be required, and compliance with operating guidelines. The costs of such CONTRACTOR activities are part of the CONTRACT PRICE.

The CONTRACTOR hereby consents for the PURCHASER to use the WORK under construction, from the start date of COMMISSIONING until the signing of the PROVISIONAL ACCEPTANCE Protocol, as part of the EKY II system technology. The PURCHASER's use of the WORK under this Section of the CONTRACT does not relieve the CONTRACTOR of its obligation to execute the WORK properly and on the timetable, nor of its responsibility for the WORK and the risk of damage thereto, excepting any damages the PURCHASER may cause as a result of failing to observe the CONTRACTOR's instructions.

All activities and manipulation performed by the PURCHASER's operators between the start of COMMISSIONING and the date of PROVISIONAL ACCEPTANCE of the WORK shall be fully under the control and on the responsibility of the CONTRACTOR, and shall be governed exclusively by the CONTRACTOR's instructions.

Throughout the performance of the CONTRACT, all inputs and outputs of the WORK's technological process remain the property of the PURCHASER. The PURCHASER shall ensure that all inputs required to COMMISSION the WORK are made available to the CONTRACTOR, in the scope and quality specified in the CONTRACT.

29.1 Preparations for COMPLEX TESTS

29.1.1 The CONTRACTOR shall commence preparations for COMPLEX TESTS in accordance with the Inspection and Test Plan and the Project for COMMISSIONING, gradually on individual operating systems. Preparations for COMPLEX TESTS shall finish once all such tests and inspections have been performed and the operational capabilities of all operating systems have been verified.

29.1.2 Preparations for COMPLEX TESTS consist of tests and inspections verifying the functionality of individual devices and functional systems, including the harmonization of such devices' and systems' joint operation. Preparations for COMPLEX TESTS further include the verification of linkages to the PURCHASER's existing systems. Before commencing such testing, the CONTRACTOR shall achieve MECHANICAL COMPLETION on the systems in question, including individual tests, pursuant to Section 28 of the CONTRACT. The CONTRACTOR shall immediately remedy any defects or incomplete works found that would impair the continuation of the COMMISSIONING process, and shall thereafter repeat the test in question. The CONTRACTOR shall issue protocols on the completion and results of all tests and inspections.

29.1.3 The end of preparations for COMPLEX TESTS shall be attested to by a Protocol signed by the Parties declaring the WORK ready for the COMPLEX TESTS. Minor defects and

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incomplete works not impairing the COMPLEX TESTS and acceptable as such to the PURCHASER shall be remedied on a timetable agreed in the COMPLEX TESTS readiness Protocol. The drafting of the Protocol shall be the responsibility of the CONTRACTOR. The PURCHASER shall not refuse to sign the Protocol without reason, and shall sign the protocol as soon after receipt as feasible. Should the PURCHASER, within five (5) business days of receipt, fail to both sign the Protocol and give the CONTRACTOR in writing its reasons for not signing, then for the purposes of the CONTRACT the Protocol shall be considered approved on the date of the PURCHASER's receipt of the draft, and the CONTRACTOR may commence the COMPLEX TESTS.

29.2 COMPLEX TESTS, TEST "A"

29.2.1 Once preparations for COMPLEX TESTS pursuant to Section 29.1 of the CONTRACT are complete, the CONTRACTOR shall perform the COMPLEX TESTS as specified in the Inspection and Test Plan, as approved by the PURCHASER. The COMPLEX TESTS shall verify the functionality of the WORK's systems in different operating modes; pursuant to the Inspection and Test Plan, the inspections and tests included in TEST "A" shall also be performed, including the guarantee testing specified in Supplement 2 of the CONTRACT for TEST "A". The COMPLEX TESTS are to verify that the technical parameters and functionality agreed in the CONTRACT have been met, particularly those given in the COMPLEX TESTS Program and general requirements on WORK operability, reliability, safety, and quality.

29.2.2 The initial operating fluids (e.g. lubricants etc.) shall be delivered by the CONTRACTOR and included in the CONTRACT PRICE.

29.2.3 As part of TEST "A", an independent entity contracted for that purpose, attended by CONTRACTOR representatives, shall perform the GUARANTEE MEASUREMENT, at the date given in the Detailed Timetable and Execution Plan for the WORK prepared pursuant to Section 24.2 of the CONTRACT. The GUARANTEE MEASUREMENT shall be performed in accordance with the Project for the GUARANTEE MEASUREMENT, as prepared by the CONTRACTOR pursuant to the requirements of Section 2.8 of Supplement 3 to the CONTRACT. The GUARANTEE MEASUREMENT is the PURCHASER's independent verification of the WORK's compliance with the guaranteed parameters given in Supplement 2 of the CONTRACT. The GUARANTEE MEASUREMENT consists of the independent entity performing measurements and assessments of all guaranteed parameters specified for TEST "A" under the CONTRACT.

In the event that, for reasons not attributable to the CONTRACTOR, the full extent of the GUARANTEE MEASUREMENT of all guaranteed parameters assigned to TEST "A" cannot be performed during TEST "A", the GUARANTEE MEASUREMENT of the remaining parameters shall be made during the TRIAL OPERATION phase, at a date agreed by the CONTRACTOR and the PURCHASER.

29.2.4 In the event that, for reasons attributable to the CONTRACTOR, the COMPLEX TESTS reveal that the parameters, functionality, and requirements on operability, reliability, safety, and quality specified for the WORK in the CONTRACT have not been achieved, the CONTRACTOR shall, at its own expense, make all changes and modifications required to achieve those parameters, functionality, and requirements. The CONTRACTOR shall notify the PURCHASER of the execution of such changes and modifications, and shall repeat the COMPLEX TESTS until such time as the technical parameters and requirements agreed have been met, unless agreed otherwise.

29.2.5 In the event that, for reasons attributable to the CONTRACTOR, repeated COMPLEX TESTS reveal that the parameters, functionality, and requirements on operability, reliability, safety, and quality specified for the WORK in the CONTRACT have not been achieved despite changes and modifications, but the WORK's non-conformity with the CONTRACT-specified parameters, functionality, and requirements is found to be minor and deemed

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acceptable by the PURCHASER insofar that it does not impair the operability, reliability, or safety of the WORK, then the PURCHASER may authorize the CONTRACTOR, in writing, to proceed to the PERFORMANCE TEST. The preceding shall, however, be conditioned on the CONTRACTOR's payment of the contractual penalty specified in Section 42.2 of the CONTRACT. If, for reasons attributable to the CONTRACTOR, the limit values of guaranteed parameters are not achieved, the PURCHASER may, at its own discretion, withdraw from the CONTRACT and / or draw down against the bank guarantee for the WORK.

- 29.2.6 Once the COMPLEX TESTS have been successfully completed, the CONTRACTOR and the PURCHASER shall sign a protocol attesting the successful completion of COMPLEX TESTS of the WORK, including the successful completion of TEST "A" and relevant GUARANTEE MEASUREMENTS, and authorizing the WORK to proceed to the PERFORMANCE TEST stage. All protocols from individual tests shall be appended to the COMPLEX TESTS Protocol. The drafting of the Protocol shall be the responsibility of the CONTRACTOR. The PURCHASER shall not refuse to sign the Protocol without reason, and shall sign the protocol as soon after receipt as feasible. Should the PURCHASER, within five (5) business days of receipt, fail to both sign the Protocol and give the CONTRACTOR in writing its reasons for not signing, then for the purposes of the CONTRACT the Protocol shall be considered approved on the date of the PURCHASER's receipt of the draft, and the CONTRACTOR may commence the PERFORMANCE TEST.
- 29.3 PERFORMANCE TEST
- 29.3.1 The PERFORMANCE TEST may commence only once COMPLEX TESTS have been successfully completed and the protocol to that effect has been signed, pursuant to Section 29.2.6 of the CONTRACT.
- 29.3.2 The PERFORMANCE TEST consists of the continuous, problem-free operation of the WORK in the duration of four hundred fifty-six (456) hours, and in all WORK operating modes allowed by the PURCHASER. The PERFORMANCE TEST is to demonstrate the operability, reliability, safety, and quality of the CONTRACTOR's execution of the WORK as required by the CONTRACT, in the scope and specification provided in the Inspection and Test Plan, as approved, and in the PERFORMANCE TEST Program, as approved. The CONTRACTOR shall operate the WORK without servicing interventions throughout the PERFORMANCE TEST. Once the PERFORMANCE TEST has been completed, the CONTRACTOR and the PURCHASER shall sign a Protocol to that effect. The drafting of the Protocol shall be the responsibility of the CONTRACTOR. The PURCHASER shall not refuse to sign the Protocol without reason, and shall sign the protocol as soon after receipt as feasible. Should the PURCHASER, within five (5) business days of receipt, fail to both sign the Protocol and give the CONTRACTOR in writing its reasons for not signing, then for the purposes of the CONTRACT the Protocol shall be considered approved on the date of the PURCHASER's receipt of the draft.
- 29.3.3 In the event that, for reasons not attributable to the CONTRACTOR, the PERFORMANCE TEST is interrupted, the CONTRACTOR shall continue the PERFORMANCE TEST in accordance with the PURCHASER's instructions once the problem has been resolved.
- 29.3.4 In the event that, for reasons attributable to the CONTRACTOR, the PERFORMANCE TEST is interrupted for more than twelve (12) hours but the CONTRACTOR succeeds in resolving the cause of the interruption, the PURCHASER shall, at its own discretion, decide whether the PERFORMANCE TEST is to continue or be repeated whole.
- 29.3.5 In the event that, for reasons attributable to the CONTRACTOR, the PERFORMANCE TEST reveals that the requirements on WORK operability and reliability have not been met, the CONTRACTOR shall, at its own expense, make all changes and modifications required to meet those requirements. The CONTRACTOR shall notify the PURCHASER of the execution of such changes and modifications, and shall repeat the PERFORMANCE TEST until such time as the requirements agreed in the PERFORMANCE TEST Program have been met. In

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the event that more than two runs of the PERFORMANCE TEST are so required, the PURCHASER may request the CONTRACTOR to reimburse the PURCHASER for all demonstrable expenses related to the third and all subsequent PERFORMANCE TESTS performed; the CONTRACTOR, if so requested, shall be obliged to comply.

- 29.3.6 In the event that, for reasons attributable to the CONTRACTOR, repeated PERFORMANCE TESTS reveal that the requirements given in the PERFORMANCE TEST Program have not been achieved despite the CONTRACTOR's changes and modifications pursuant to Section 29.3.5 of the CONTRACT, but the WORK's non-conformity with the requirements is found to be minor and deemed acceptable by the PURCHASER insofar that it does not impair the operability, reliability, safety, or quality of the WORK, then the PURCHASER may agree, in writing, to accept the WORK, provided that all requirements of Section 30 of the CONTRACT are met.
- 29.3.7 In the event that, for reasons not attributable to the CONTRACTOR, the PERFORMANCE TEST cannot be completed within six (6) months from the date of MECHANICAL COMPLETION, or within an alternative period agreed by the PURCHASER and the CONTRACTOR, the Parties shall then agree on an alternative manner of acceptance of the WORK in the sense of Section 30 of the CONTRACT. Such an agreement does not, however, relieve the CONTRACTOR of the obligation to perform the PERFORMANCE TEST if and when that is made possible by the PURCHASER, nor of the CONTRACTOR's other obligations under the CONTRACT.

30. WORK PROVISIONAL ACCEPTANCE

- 30.1 The WORK shall be Provisionally Accepted, provided that Section 30.2 of the CONTRACT is respected, if and when:
- (a) The PERFORMANCE TEST pursuant to Section 29.3.2 of the CONTRACT has been successfully completed and the PERFORMANCE TEST Protocol has been signed; or
 - (b) The PERFORMANCE TEST has not been successfully completed, but the PURCHASER decided, pursuant to Section 29.3.6 of the CONTRACT, to accept the WORK; or
 - (c) The PERFORMANCE TEST has not been completed or was not performed at all, and the Parties have agreed pursuant to Section 29.3.7 of the CONTRACT
 - (d) The CONTRACTOR submits to the PURCHASER all documentation required by the CONTRACT to be submitted by the end of the PERFORMANCE TEST, or with regard to the state of the WORK if (b) above has been applied.
- 30.2 When the conditions for the PROVISIONAL ACCEPTANCE of the WORK given in Section 30.1 of the CONTRACT have been met, the CONTRACTOR shall prepare the draft PROVISIONAL ACCEPTANCE Protocol within seven (7) days of the submission of all required documents and fulfillment of all obligations required of the CONTRACTOR at this point by the CONTRACT, and shall submit the Protocol to the PURCHASER for approval. The Protocol shall only be accepted if all of the CONTRACTOR's obligations under the CONTRACT (excepting obligations relating to TRIAL OPERATION of the WORK) have been met, particularly, if the WORK has been properly executed as required by the CONTRACT, including PURCHASER staff training pursuant to Section 34 of the CONTRACT, submission of documentation required by the CONTRACT, and submission of the WORK to the purchaser without legal or material issues (minor, relatively unimportant incomplete works acceptable to the PURCHASER insofar as they do not impair the safe and reliable operation of the WORK, may be excepted, but shall be listed along with deadlines for their resolution in the PROVISIONAL ACCEPTANCE Protocol for the WORK; in the event of doubt, potential issues shall not be considered minor, unimportant, or immaterial to the safe and reliable operation of the WORK).

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Upon receipt of the CONTRACTOR's draft, the PURCHASER shall, within seven (7) days, either:

- (a) Sign the PROVISIONAL ACCEPTANCE Protocol; or
- (b) Give the CONTRACTOR, in writing, its reasons for not signing the PROVISIONAL ACCEPTANCE Protocol.

In the event that the PURCHASER fails to acknowledge receipt of the draft PROVISIONAL ACCEPTANCE Protocol within seven (7) days of receipt, or refuses to sign the PROVISIONAL ACCEPTANCE Protocol despite the fact that the conditions for the Protocol's signing have been met and that the WORK is operational, then the PROVISIONAL ACCEPTANCE Protocol for the WORK shall, for the purposes of the CONTRACT, be considered signed on the eighth (8th) DAYS from the PURCHASER's receipt of the draft. At that moment, the WARRANTY PERIOD shall commence, the liability for damages to the WORK shall transfer to the PURCHASER, and the CONTRACTOR may issue the final invoice for the WORK pursuant to the CONTRACT.

- 30.3 An integral part of the PROVISIONAL ACCEPTANCE (PAC) Protocol for the WORK shall be a list of obvious defects and incomplete works found with the WORK that the PURCHASER considers acceptable pursuant to Section 30.2 of the CONTRACT, including the CONTRACTOR's and PURCHASER's agreement on the manner and timetable for their remedy by the CONTRACTOR. Any apparent defects and incomplete works known on the WORK as of the date of issue of the PROVISIONAL ACCEPTANCE (PAC) Protocol may not, in any event, individually or together, impair the safe and economic operation of the WORK, nor negatively impact the WORK's performance parameters.
- 30.4 An integral part of the PROVISIONAL ACCEPTANCE Protocol for the WORK shall further be an agreement on the disposal of the WORK's construction SITE (i.e., cleanup of the SITE, including in particular the complete clearance of open areas, removal or relocation of temporary structures and systems, relocation of machinery, personnel, etc.), including the final disposition of the SITE area, unless this would be detrimental to further progress on the WORK. No CONTRACTOR systems found at the SITE as of the date of signing of the WORK PROVISIONAL ACCEPTANCE (PAC) Protocol may limit the safe operation and maintenance of the PURCHASER's systems, including the WORK. The PURCHASER's and CONTRACTOR's agreement on the SITE shall specify a date for the completion of SITE disposal, which shall in no event exceed thirty (30) DAYS from the signing of the WORK PROVISIONAL ACCEPTANCE (PAC) Protocol. The CONTRACTOR shall also submit to the PURCHASER documentation of waste disposal practices.
- 30.5 On the day of the PURCHASER's signing of the PROVISIONAL ACCEPTANCE (PAC) Protocol for the WORK, the WORK is considered accepted by the PURCHASER from the CONTRACTOR and the WARRANTY PERIOD begins. During the WARRANTY PERIOD, the operation and staffing of the WORK are the responsibility and liability of the PURCHASER. This does not, however, affect the CONTRACTOR's warranty and responsibility for defects obligations as specified in the CONTRACT.

31. TRIAL OPERATION

- 31.1 The TRIAL OPERATION phase shall have a duration of twelve (12) months and begins on the date of signing of the PROVISIONAL ACCEPTANCE Protocol for the WORK. TRIAL OPERATION shall end upon the signing of the TRIAL OPERATION Protocol. The drafting of the Protocol shall be the responsibility of the CONTRACTOR. The PURCHASER shall not refuse to sign the Protocol without reason, and shall sign the protocol as soon after receipt as feasible. Should the PURCHASER, within five (5) business days of receipt, fail to both sign the Protocol and give the CONTRACTOR in writing its reasons for not signing,

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then for the purposes of the CONTRACT the Protocol shall be considered approved and signed and TRIAL OPERATION shall be considered ended on the date of the PURCHASER's receipt of the draft.

- 31.2 TRIAL OPERATION shall be performed by the PURCHASER's duly trained staff, fully at the PURCHASER's responsibility, and in accordance with the operations guidelines for the WORK and potential CONTRACTOR instructions. The CONTRACTOR'S REPRESENTATIVE or a qualified deputy appointed by the Representative shall be continuously present for the first six (6) months of TRIAL OPERATION, on business days from 6:00 a.m. to 2 p.m., unless agreed otherwise or unless operational exigencies not attributable to the PURCHASER require a more frequent and / or longer presence of the CONTRACTOR. Between 2:00 p.m. and 6:00 a.m., the CONTRACTOR shall make itself available via telephone. For the remaining six (6) months of TRIAL OPERATION, the CONTRACTOR'S REPRESENTATIVE or a qualified deputy appointed by the Representative shall make themselves available upon the PURCHASER's request. The CONTRACTOR'S REPRESENTATIVE or a qualified deputy appointed by the Representative shall also be available (on call) outside standard business hours and on public holidays and weekends, so that they are able to present themselves at the PURCHASER's premises within twenty-four (24) hours of the PURCHASER's request, unless agreed otherwise with regard to the severity of the particular situation.
- 31.3 The CONTRACTOR's obligations during TRIAL OPERATIONS that are included in the CONTRACT PRICE include, in particular:
- (a) Resolution of operational problems and performance of warranty repairs without delay. During the first three (3) months of TRIAL OPERATION, the CONTRACTOR's staff shall perform a personal inspection of the WORK no less frequently than 2 times per day.
 - (b) Adjustments and tuning of systems in order to optimize operation in all operating modes, on the basis of changes proposed by the CONTRACTOR and approved by the PURCHASER, including the amendment of actual-state and related documentation to reflect such changes
 - (c) Preparation of monthly reports on the WORK's TRIAL OPERATION and their submission to the PURCHASER for approval no later than on the tenth (10th) day of the month following the month being reported on. Such reports shall be based on operational records and systems inspections and shall, among others, list all discovered defects and malfunctions, including measures to resolve them, discuss the load on the WORK relative to its capacity, and assess the operation of the WORK with regard to public authorities' requirements. A list of contents for monthly reports shall be prepared by the CONTRACTOR and approved by the PURCHASER before the first such report is submitted.
 - (d) Preparation of the final TRIAL OPERATION assessment report in the scope approved by the PURCHASER, and its submission to the PURCHASER within fourteen (14) days from the end of TRIAL OPERATION
- 31.4 In the event that the CONTRACTOR provides instructions to the PURCHASER's operators of the WORK during TRIAL OPERATION, the correctness of such instructions shall be the responsibility of the CONTRACTOR. The CONTRACTOR shall not be liable for any damages resulting from a failure on the part of the PURCHASER's staff to follow the CONTRACTOR's instructions, or from failure of PURCHASER staff to follow operations and maintenance guidelines for the WORK.
- 31.5 The CONTRACTOR's obligations in relation to TRIAL OPERATION do not relieve the CONTRACTOR of responsibilities relating to the WARRANTY PERIOD.

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32. GUARANTEE MEASUREMENT DURING TEST “B”, WORK FINAL ACCEPTANCE

- 32.1 During the second year of the twenty-four (24) months long WARRANTY PERIOD for the WORK’s technological systems pursuant to Section 43.1.1-i of the CONTRACT, at a date specified by the PURCHASER, an independent entity contracted for that purpose shall, in the presence of PURCHASER and CONTRACTOR representatives, perform and assess GUARANTEE MEASUREMENTS of guaranteed parameters allocated to TEST “B”. The GUARANTEE MEASUREMENT shall be performed pursuant to the Project for the GUARANTEE MEASUREMENT prepared by the CONTRACTOR in accordance with the requirements of Section 2.8 of Supplement 3 to the CONTRACT. The GUARANTEE MEASUREMENT during TEST “B” is for the PURCHASER to verify retrospectively that the WORK achieves the guaranteed parameters agreed in Supplement 2 to the CONTRACT.
- 32.2 In the event that, for reasons not attributable to the PURCHASER, TEST “B” reveals that the guaranteed parameters given in Supplement 2 to the CONTRACT have not been achieved, the CONTRACTOR shall be liable to pay to the PURCHASER the contractual penalty specified in Section 42.2 of the CONTRACT, unless the Parties agree on a different procedure (i.e., execution of required changes and modifications). If, even after changes and modifications are made by the CONTRACTOR, the limit values of guaranteed parameters given in Supplement 2 to the CONTRACT are not achieved, the PURCHASER may, at its own discretion, withdraw from the CONTRACT and / or draw down against the bank guarantee for the WORK. All costs related to repeated GUARANTEE MEASUREMENTS shall be borne by the CONTRACTOR, through reimbursement of the PURCHASER against an invoice / tax receipt made out for the amount.
- 32.3 Once TEST “B” has been successfully performed and the WARRANTY PERIOD of twenty-four (24) months pursuant to Section 43.1.1-a (i) of the CONTRACT has expired (or been extended in accordance with the CONTRACT), the CONTRACTOR shall submit for the PURCHASER’s approval and signing, without undue delay, the FINAL ACCEPTANCE Protocol for the technology section of the WORK, whereby the CONTRACTOR’s relevant obligations under the CONTRACT shall be considered fulfilled.
- 32.4 Once the WARRANTY PERIOD of thirty-six (36) months pursuant to Section 43.1.1-a (ii) of the CONTRACT has expired (or been extended in accordance with the CONTRACT), the CONTRACTOR shall submit for the PURCHASER’s approval and signing, without undue delay, the FINAL ACCEPTANCE Protocol for those technology sections of the WORK that fall under the thirty-six (36) month warranty, whereby the CONTRACTOR’s relevant obligations under the CONTRACT shall be considered fulfilled.
- 32.5 Once the WARRANTY PERIOD of sixty (60) months pursuant to Section 43.1.1-a (iii) of the CONTRACT has expired, the CONTRACTOR shall submit for the PURCHASER’s approval and signing, without undue delay, the FINAL ACCEPTANCE Protocol for the WORK, whereby the CONTRACTOR’s relevant obligations under the CONTRACT shall be considered fulfilled.
- 32.6 The PURCHASER shall not refuse to sign the Protocols pursuant to Section 32.3, 32.4, and 32.5 of the CONTRACT without reason, and shall sign the protocols as soon after receipt as feasible. Should the PURCHASER, within five (5) business days of receipt, fail to both sign a Protocol and give the CONTRACTOR in writing its reasons for not signing, then for the purposes of the CONTRACT that Protocol shall be considered approved and signed on the date of the PURCHASER’s receipt of the draft.
- 32.7 Signing of the WORK FINAL ACCEPTANCE Protocol in the sense of Section 32.5 of the CONTRACT does not terminate those of the CONTRACTOR’s obligations that are agreed to remain in effect after the WORK’s FINAL ACCEPTANCE, including the obligations of Section 56.7 of the CONTRACT.

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33. EMERGENCY WORKS

- 33.1 In the event that an emergency state arises in relation to the execution of the WORK that necessitates protective or repair WORKS that may not be postponed and aim to prevent damage to the WORK or other property or injury to persons, the CONTRACTOR shall commence such works immediately.
- 33.2 In the event that the CONTRACTOR, despite the state of emergency, is unable or unwilling to commence the WORKS pursuant to the previous Section without delay, the PURCHASER may perform such WORKS itself or have them performed in whichever manner the PURCHASER considers necessary to prevent damage to the WORK or other property, other damages, or injury to persons. In that event, the PURCHASER shall, without undue delay, notify the CONTRACTOR that an emergency has arisen, that WORKS were done and of the reasons and costs of such WORKS, and discuss any impact the matter may have on the remainder of the CONTRACT. No such action of the PURCHASER shall affect the CONTRACTOR's liability for defects during the WARRANTY PERIOD.
- 33.3 If such WORKS are performed by the CONTRACTOR pursuant to Section 33.1 of the CONTRACT with notification to the PURCHASER, and have arisen for reasons attributable to the PURCHASER, the PURCHASER shall, once the claim has been documented, reimburse the CONTRACTOR for all demonstrable and reasonable expenses that may have arisen to it in relation to such WORKS, without undue delay but no later than in the CONTRACTOR's usual invoice payment period pursuant to the CONTRACT; the Parties shall also discuss any potential further impacts on the WORK. It shall be the duty of the CONTRACTOR to demonstrate to the PURCHASER that such reasons are attributable to the PURCHASER.
- 33.4 If such WORKS are performed by or on behalf of the PURCHASER pursuant to Section 33.2 of the CONTRACT, and have arisen for reasons attributable to the CONTRACTOR, the CONTRACTOR shall, once the claim has been documented, reimburse the PURCHASER for all demonstrable and reasonable expenses that may have arisen to it in relation to such WORKS, against a special invoice / tax receipt made out by the PURCHASER for the amount and pursuant to the CONTRACT, with payment period the same as that of the CONTRACTOR's usual invoice payment period pursuant to the CONTRACT;

34. PURCHASER OPERATIONS AND MAINTENANCE STAFF TRAINING

- 34.1 The CONTRACTOR shall provide training for the PURCHASER's representatives or representatives of PURCHASER-contracted third parties pursuant to Supplement 6 to the CONTRACT; the training shall prepare such staffers for all tasks relating to their job description in the operation and / or maintenance of the WORK, and a training protocol shall be signed to attest the same.

35. REPLACEMENT PARTS AND RAPID-WEAR PARTS

- 35.1 Replacement parts and rapid-wear parts for WARRANTY PERIOD operation
- The CONTRACTOR shall, without undue delay, procure all replacement and rapid-wear parts required to operate the WORK for the twenty-four (24) month WARRANTY PERIOD, or the thirty-six (36) month and / or sixty (60) month WARRANTY PERIOD for the parts of the WORK for which the CONTRACT stipulates such WARRANTY PERIOD length, and to use such parts to remedy relevant defects on the WORK. Such replacement and rapid-wear parts shall be included in the CONTRACT PRICE.
- 35.2 Replacement parts and rapid-wear parts for operation in the two-year post-warranty period

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Supplement 12 shall contain a list, including prices, of recommended replacement and rapid-wear parts for operation of the WORK for two years after the end of the WARRANTY PERIOD, including all information required to identify the part; i.e., name, number of units, replacement frequency for rapid-wear parts, prices, and manner of procurement of the replacement / rapid-wear part in question, i.e., whether the replacement / rapid wear part would be delivered directly by the CONTRACTOR or by a SUBCONTRACTOR. The prices given in this list of replacement and rapid-wear parts for two-year post-warranty operation of the WORK shall be final for the CONTRACTOR until the end of the WARRANTY PERIOD pursuant to Section 43.1.1-a (i) and / or 43.1.1-a (ii) of the CONTRACT, depending on the replacement / rapid wear part in question. The CONTRACTOR acknowledges the PURCHASER's right to demand, before the expiry of the WARRANTY PERIOD agreed in the CONTRACT, the signing of a contract for the delivery of replacement and rapid-wear parts for two-year post-warranty operation of the WORK, in a scope of the PURCHASER's choice. Deliveries of replacement and rapid-wear parts for the two-year post-warranty operation of the WORK are not subject to this CONTRACT, and if a contract is executed for that purpose, it shall be governed by Czech public procurement legislation; the PURCHASER shall have no obligation to contract for the delivery of replacement and rapid-wear parts for the two-year post-warranty operation of the WORK specifically with the CONTRACTOR. In the event that the PURCHASER does contract with the CONTRACTOR, the CONTRACTOR shall extend to the PURCHASER the CONTRACTOR's best-customer terms on such replacement and rapid-wear parts deliveries.

- 35.3 The list of recommended replacement and rapid-wear parts for the two-year post-warranty operation of the WORK given in Supplement 12 to the CONTRACT shall be further specified by the CONTRACTOR and submitted to the PURCHASER as part of the DOCUMENTATION FOR EXECUTION OF THE PROJECT.

36. POST-WARRANTY SERVICING

- 36.1 The CONTRACTOR acknowledges the PURCHASER's right to demand, after the expiry of the WARRANTY PERIOD agreed in the CONTRACT, the signing of a contract for the provision of post-warranty servicing for the lifetime of the WORK. Post-warranty servicing are not subject to this CONTRACT, and if a contract is executed for that purpose, it shall be governed by Czech public procurement legislation (that is, the PURCHASER shall have no obligation to contract for post-warranty servicing specifically with the CONTRACTOR, particularly if the latter fails to meet the legal requirements; in that event also, however, the CONTRACTOR shall provide due cooperation to enable the proper provision of post-warranty servicing).

37. SITE AND ASSEMBLY SITES

- 37.1 Information on the state and equipment of the SITE is provided in Supplement 1 to the CONTRACT.
- 37.2 The CONTRACTOR shall, in its execution of the WORK, keep the SITE and assembly sites free of all non-essential obstructions, and shall warehouse elsewhere or remove any and all supernumerary materials, waste, and surplus, as well as CONSTRUCTION EQUIPMENT that is no longer needed to perform WORKS or SERVICES. No equipment of the CONTRACTOR present at the SITE / assembly site shall limit the safe operation and maintenance of the PURCHASER's systems, unless limitation is necessary to execute the WORK and agreed in advance between the Parties. The Parties declare that, for the duration of the WORK's execution, the SITE (incl. assembly sites) shall be a work site of the CONTRACTOR, and the CONTRACTOR shall therefore be responsible for the safety of its or its SUBCONTRACTORS' personnel present at the SITE / assembly site.

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- 37.3 The costs of all temporary structures, access roads, and equipment on and off the SITE that are necessary to execute the WORK, including maintenance and disposal, shall be borne by the CONTRACTOR and part of the CONTRACT PRICE. The PURCHASER shall, however, provide the CONTRACTOR with required cooperation.

38. ADMINISTRATION RULES, OCCUPATIONAL HEALTH AND SAFETY

- 38.1 The organization of and procedures for the exchange of documents between the Parties, as well as the publication, archiving, distribution, revision, and disposal of documents, in the execution of the CONTRACT, shall be governed by the Administration Rules. The Administration Rules shall specify the rules of communication between the Parties and of the handling of documents in the performance of the CONTRACT. The CONTRACTOR shall prepare the Administration Rules document pursuant to the requirements given in Section 2.1 of Supplement 3 to the CONTRACT so as to cover all areas in the administration of the WORK pursuant to the CONTRACT; the CONTRACTOR shall submit the Administration Rules, as approved by the PURCHASER, no later than thirty (30) DAYS after CONTRACT signing.
- 38.2 In its execution of the WORK, the CONTRACTOR shall adhere to all currently valid legislation and regulations in the areas of Occupational Health and Safety, fire safety, and environment protection, and shall be fully liable for any breaches thereof.
- 38.3 The CONTRACTOR shall comply with the rules set out in the "Requirements on Suppliers" document, which is part of Supplement 11 to the CONTRACT.

39. WASTE MANAGEMENT, ENVIRONMENT PROTECTION

- 39.1 Throughout the execution of the WORK, the CONTRACTOR shall be considered the source of all wastes arising from its activities on the WORK, including communal waste. The CONTRACTOR shall therefore meet its obligations as the Source of Waste Materials in the sense of Act No. 185/2001, the Act on Wastes and Amending Certain Other Acts, as amended, and the legislation implementing that Act.
- 39.2 Waste management (disposal) in relation to the CONTRACT shall be handled by the CONTRACTOR, at its own expense. The CONTRACTOR shall, upon the PURCHASER's request, document compliance with its obligations under this Section 39 of the CONTRACT.
- 39.3 The CONTRACTOR shall keep the WORK SITE and surroundings, including any roads utilized, clean and orderly. In the event that the CONTRACTOR, within a technologically reasonable period from receiving the PURCHASER's REPRESENTATIVE's notice to that effect, fails to remedy a non-conforming situation attributable to the CONTRACTOR, the PURCHASER may have cleanup performed by other means, in which case all demonstrable, reasonable expenses arising therefrom shall be charged to the CONTRACTOR. As regards roads, the CONTRACTOR shall maintain cleanliness regularly and with best possible care, so as to minimize the inconvenience or jeopardy to the operation and accessibility of the PURCHASER's other systems or to general traffic.
- 39.4 The CONTRACTOR shall handle hazardous wastes and chemicals in relation to the WORK in accordance with the requirements of relevant legislation (including, among others, Act No. 185/2001, the Wastes Act, and Act No. 350/2011 on Chemicals and Chemical Compounds).
- 39.5 The CONTRACTOR shall ensure that wastes are not stolen or destroyed and that they do not negatively affect the surrounding area.

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- 39.6 In the event that the CONTRACTOR, in its execution of the WORK, discovers the presence of asbestos, the CONTRACTOR shall inform the PURCHASER without delay, including detailed description of asbestos location and quantity, and shall postpone further works at that location until the asbestos has been disposed of. In that event, the PURCHASER shall, without delay, contract a specialist company duly authorized under Czech Republic Law to remove and dispose of asbestos. The Parties shall also take effective measures to minimize the impact on the Timetable and Execution Plan for the WORK, and shall handle any such impact pursuant to Section 51 of the CONTRACT.
- 39.7 In the event of a leak of oil or other substances hazardous to the environment, particularly to surface water quality, the CONTRACTOR shall, without delay, prevent further leakage and cover all costs of remedying the effects of the leak. The CONTRACTOR shall also inform the PURCHASER without delay of any such leaks that may occur.
- 39.8 The PURCHASER'S REPRESENTATIVE, as well as other authorized PURCHASER personnel, shall have the right to perform spot inspections of the CONTRACTOR's waste management practices.
- 39.9 The PURCHASER may unilaterally order the CONTRACTOR to cease works if such works do not conform to environment protection, work safety, and fire safety legislation. In that event, the CONTRACTOR may only resume such works once the non-conformity has been remedied, and such interruptions shall not affect the WORK's timetable.
- 39.10 All damages and expenses relating to improper waste management shall be borne by the CONTRACTOR. The CONTRACTOR shall also be liable to reimburse to PURCHASER for any and all fines and remedial measures that may be levied against the PURCHASER as a result of faulty waste management practices of the CONTRACTOR.
- 39.11 The CONTRACTOR shall also comply with Act No. 114/1992, the Nature and Landscape Protection Act, as amended, including the legislation implementing that Act. All damages and expenses relating to Nature and Landscape Protection Act breaches shall be borne by the CONTRACTOR. The CONTRACTOR shall also be liable to reimburse to PURCHASER for any and all fines and remedial measures that may be levied against the PURCHASER as a result of the CONTRACTOR's breaches of the Act.
- 39.12 The CONTRACTOR shall take adequate steps to ensure that its WORK-related equipment (such as vehicles, construction machinery, etc.) does not leak operating fluids into the ground or groundwater, and shall ensure engines are not kept running needlessly. Unless agreed otherwise, the CONTRACTOR shall not perform maintenance work on its equipment nor refill operating fluids at the SITE.
- 39.13 The CONTRACTOR shall comply with its obligations under Act No. 254/2001 where these relate to the WORK; in particular, this concerns hazardous substance handling.

40. WORK SECURITY

- 40.1 The CONTRACTOR shall, at its own risk and expense, provide and maintain any and all lighting, fencing, and security of the SITE that may be required for the proper execution and protection of the WORK or for the safety of the PURCHASER, owners of neighboring properties, throughout the execution of the WORK.

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F. GUARANTEES AND LIABILITIES

41. GUARANTEED PARAMETERS

- 41.1 The CONTRACTOR hereby warrants and represents that the WORK shall, assuming operational guidelines are adhered to, be able to achieve the guaranteed parameters given in Supplement 2 to the CONTRACT.
- 41.2 The GUARANTEE MEASUREMENT to verify that guaranteed parameters have been met shall be performed and evaluated by an independent entity contracted by the CONTRACTOR and approved by the PURCHASER, attended by CONTRACTOR and PURCHASER representatives, in accordance with the Project for the GUARANTEE MEASUREMENT, as prepared by the CONTRACTOR and approved by the PURCHASER, on the timetable given in Supplement 2 to the CONTRACT.

42. CONTRACTUAL PENALTIES

In the event that the CONTRACTOR breaches its obligations given below in this Section 42 of the CONTRACT, excepting cases pursuant to Section 50 and Section 23.2 of the CONTRACT, the PURCHASER may, without limiting its other rights under the CONTRACT, including the right to reimbursement for damages in excess of contractual penalties, demand the payment of a contractual penalty from the CONTRACTOR, in which event the CONTRACTOR shall be required to pay.

- 42.1 CONTRACTUAL penalties for CONTRACTOR delays
- 42.1.1 The milestones subject to a contractual penalty in the event of CONTRACTOR delay are as follows:
- (i) Deadline for submission of DOCUMENTATION FOR EXECUTION OF THE PROJECT
 - (ii) Deadline for submission of documentation for request to change work-in-progress
 - (iii) Deadline for submission of documentation for TRIAL OPERATION approval
 - (iv) Deadline for submission of documentation for official approval of the finished WORK
 - (v) Deadline for WORK PROVISIONAL ACCEPTANCE
 - (vi) Deadlines for remedy of obvious defects and incomplete works at the WORK acceptable to the PURCHASER, as listed in the WORK's PROVISIONAL ACCEPTANCE Protocol
 - (vii) Deadlines for commencement of defect remedy during WARRANTY PERIOD pursuant to Section 43.5 of the CONTRACT
 - (viii) Deadlines for defect resolution
- 42.1.2 In the event that the deadlines for any of the milestones given above are missed for reasons attributable to the CONTRACTOR, the CONTRACTOR shall be liable to pay to the PURCHASER a contractual penalty in the amount of:
- (i) CZK twenty-five (25) thousand for each day, even begun, of CONTRACTOR delay in submitting PURCHASER-approved DOCUMENTATION FOR EXECUTION OF THE PROJECT pursuant to Section 2.5.1 of Supplement 3 to the CONTRACT, calculated separately for each of the deadlines given in Section 10.1-p of the CONTRACT.
 - (ii) CZK twenty-five (25) thousand for each day, even begun, of CONTRACTOR delay in submitting PURCHASER-approved documentation for request to change work-in-

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progress pursuant to Section 2.6 of Supplement 3 to the CONTRACT, in accordance with Section 10.1-q of the CONTRACT.

- (iii) CZK one hundred (100) thousand for each day, even begun, of CONTRACTOR delay in submitting documentation for TRIAL OPERATION approval pursuant to Section 2.14 of Supplement 3 to the CONTRACT, in accordance with Section 10.1-w of the CONTRACT.
- (iv) CZK twenty-five (25) thousand for each day, even begun, of CONTRACTOR delay in submitting documentation for official approval of the finished WORK pursuant to Section 2.14 of Supplement 3 to the CONTRACT, in accordance with Section 10.1-x of the CONTRACT.
- (v) CZK three hundred (300) thousand for each day, even begun, of CONTRACTOR delay in PROVISIONAL ACCEPTANCE of the WORK pursuant to Section 30 of the CONTRACT.
- (vi) CZK ten (10) thousand for each day, even begun, of CONTRACTOR delay in the remedy of obvious defects and incomplete works at the WORK acceptable to the PURCHASER, as listed in the WORK's PROVISIONAL ACCEPTANCE Protocol, pursuant to Section 30.2 of the CONTRACT.
- (vii) CZK one (1) thousand for each full hour of CONTRACTOR delay in the commencement of remedy of defects impeding the safe and reliable operation of the WORK pursuant to Section 43.5-a of the CONTRACT, for each case of delay in the commencement of remedy of such defects.
- (viii) In the event that the CONTRACTOR has, under Section 43.6 of the CONTRACT, been granted a certain period to remove defects impeding the operation of the WORK, and the CONTRACTOR has failed to remedy such defects in that period, then the PURCHASER may demand the CONTRACTOR to pay, and the CONTRACTOR shall then be required to pay, a contractual penalty in the amount of CZK two hundred fifty (250) thousand for each day, even begun, of CONTRACTOR delay in the commencement of remedy of defects impeding the operation of the WORK, or in the amount of CZK fifty (50) thousand for each day, even begun, of CONTRACTOR delay in the commencement of remedy of defects not impeding the operation of the WORK. Remedy of the defect in question does not relieve the CONTRACTOR's obligation to pay any contractual penalties due under this Section 42.1.2-viii of the CONTRACT.

42.1.3 The burden of proof for delays attributable to the CONTRACTOR shall rest with the PURCHASER.

42.1.4 In the event that total contractual penalties levied under Section 42.1.2 of the CONTRACT reach fifteen per cent (15%) of the CONTRACT PRICE, the PURCHASER may withdraw from the CONTRACT without renouncing any of its other rights under the CONTRACT.

42.2 CONTRACTUAL penalties for failure to achieve WORK guaranteed parameters

42.2.1 The CONTRACTOR hereby warrants and represents that the WORK as delivered shall achieve the guaranteed parameters given in Supplement 2 to the CONTRACT. The guaranteed parameters shall be measured on the terms and timetable specified in the CONTRACT, particularly in Supplement 2 to the CONTRACT. In the event that the GUARANTEE MEASUREMENT performed pursuant to the CONTRACT reveals that guaranteed parameters specified in Supplement 2 to the CONTRACT have not been achieved, the CONTRACTOR shall be liable to pay to the PURCHASER contractual penalties as specified in Sections 42.2.2 through 42.2.14 of the CONTRACT.

42.2.2 For failing to meet the guaranteed parameters given in Item 2.1.4 of Supplement 2 to the CONTRACT (TZL separation efficiency in ABS), the CONTRACTOR shall be liable to pay a

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contractual penalty in the amount of CZK 177,000.00 for each 1 percentage point of difference from the guaranteed TZL separation value in the ABS.

- 42.2.3 For failing to meet the guaranteed parameters given in Item 2.1.7 of Supplement 2 to the CONTRACT (Emission (concentration) of droplets), the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 9,000.00 for each 1 mg/Nm³ above the guaranteed emission of droplets value.
- 42.2.4 For failing to meet the guaranteed parameters given in Items 2.2.1 through 2.2.6 of Supplement 2 to the CONTRACT (Lime Consumption), the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 96,700.00 for each, even begun, 1 kg/h by which the weighted actual value exceeds the weighted value of the guaranteed consumption parameters.

The weighted value of actual consumption shall be determined by the formula:

$$S_V = k_{\max1} \times S_{\max1} + k_1 \times S_1 + k_2 \times S_2 + k_3 \times S_3 + k_4 \times S_4 + k_{\max2} \times S_{\max2}$$

Where the individual terms are:

- S_V = Weighted value of actual consumption values
- $S_{\max1}$ = Actual consumption recorded in guarantee measurement at maximum power state and using lime var. 1
- $k_{\max1}$ = 0.04
- S_1 = Actual consumption recorded in guarantee measurement at power state 1 and using lime var. 1
- k_1 = 0.12
- S_2 = Actual consumption recorded in guarantee measurement at power state 2 and using lime var. 1
- k_2 = 0.3
- S_3 = Actual consumption recorded in guarantee measurement at power state 3 and using lime var. 1
- k_3 = 0.38
- S_4 = Actual consumption recorded in guarantee measurement at power state 4 and using lime var. 1
- k_4 = 0.12
- $S_{\max2}$ = Actual consumption recorded in guarantee measurement at power state 1 and using lime var. 2
- $k_{\max2}$ = 0.04

Weighted value of guaranteed consumption values shall be determined using the formula:

$$G_V = k_{\max1} \times G_{\max1} + k_1 \times G_1 + k_2 \times G_2 + k_3 \times G_3 + k_4 \times G_4 + k_{\max2} \times G_{\max2}$$

Where the individual terms are:

- G_V = Weighted value of guaranteed consumption values
- $G_{\max1}$ = Guaranteed consumption at maximum power state and using lime var. 1
- $k_{\max1}$ = 0.04
- G_1 = Guaranteed consumption at power state 1 and using lime var. 1
- k_1 = 0.12
- G_2 = Guaranteed consumption at power state 2 and using lime var. 1
- k_2 = 0.3

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- G_3 = Guaranteed consumption at power state 3 and using lime var. 1
- $k_3 = 0.38$
- G_4 = Guaranteed consumption at power state 4 and using lime var. 1
- $k_4 = 0.12$
- $G_{\max 2}$ = Guaranteed consumption at power state 1 and using lime var. 2
- $k_{\max 2} = 0.04$

- 42.2.5 For failing to meet the guaranteed parameter given in Items 2.3.1 of Supplement 2 to the CONTRACT (Capacity of dry hydrate transportation route) the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 1,314.00 for every 1 kg / h, which will be less than the guaranteed value of the transport line capacity of thirteen (13) thousand kg / h, increased by an additional CZK 3,066.00 for every 1 kg / h, which the actual value of the transport line capacity will be less than ten (10) kg / h.
- 42.2.6 For failing to meet the guaranteed parameter given in Item 2.3.2 of Supplement 2 to the CONTRACT (Electric energy consumption of dry hydrate transportation route), the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 42,000.00 for each 1 kW (kW/h) by which the actual value exceeds the value of the guaranteed consumption.
- 42.2.7 For failing to meet the guaranteed parameters given in Items 2.4.1 through 2.4.6 of Supplement 2 to the CONTRACT (Electrical energy consumption – at 0% Energo-Gypsum output), including electric power consumption due to the use of pressurized air from the PURCHASER's sources (guaranteed parameters 2.5.1 through 2.5.12), the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 126,100.00 for each 1 kW by which the weighted actual value exceeds the weighted value of the guaranteed consumption parameters.

Weighted value of actual consumption values shall be determined using the formula:

$$S_V = [(k_{\max 1} \times S_{E\max 1} + k_1 \times S_{E1} + k_2 \times S_{E2} + k_3 \times S_{E3} + k_4 \times S_{E4} + k_{\max 2} \times S_{E\max 2}) + (k_{\max 1} \times S_{V6\max 1} + k_1 \times S_{V61} + k_2 \times S_{V62} + k_3 \times S_{V63} + k_4 \times S_{V64} + k_{\max 2} \times S_{V6\max 2}) \times 0.115 + (k_{\max 1} \times S_{V3\max 1} + k_1 \times S_{V31} + k_2 \times S_{V32} + k_3 \times S_{V33} + k_4 \times S_{V34} + k_{\max 2} \times S_{V3\max 2}) \times 0.102] \times p_{AP}$$

Where the individual terms are:

- S_V = Weighted value of actual consumption values
- $S_{E\max 1}$ = Actual electric power consumption in kW (kWh/h) recorded in guarantee measurement at maximum power state and using lime var. 1
- $S_{V6\max 1}$ = Actual pressurized air consumption at 6 bar in Nm³/h recorded in guarantee measurement at maximum power state and using lime var. 1 (at 0% Energo-Gypsum output)
- $S_{V3\max 1}$ = Actual pressurized air consumption at 3.5 bar recorded in guarantee measurement at maximum power state and using lime var. 1 (at 0% Energo-Gypsum output)
- $k_{\max 1} = 0.04$
- S_{E1} = Actual electric power consumption in kW (kWh/h) recorded in guarantee measurement at power state 1 and using lime var. 1
- S_{V61} = Actual pressurized air consumption at 6 bar in Nm³/h recorded in guarantee measurement at power state 1 and using lime var. 1 (at 0% Energo-Gypsum output)

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- S_{V31} = Actual pressurized air consumption at 3.5 bar in Nm³/h recorded in guarantee measurement at power state 1 and using lime var. 1 (at 0% Energo-Gypsum output)
- $k_1 = 0.12$
- S_{E2} = Actual electric power consumption in kW (kWh/h) recorded in guarantee measurement at power state 2 and using lime var. 1
- S_{V62} = Actual pressurized air consumption at 6 bar in Nm³/h recorded in guarantee measurement at power state 2 and using lime var. 1 (at 0% Energo-Gypsum output)
- S_{V32} = Actual pressurized air consumption at 3.5 bar in Nm³/h recorded in guarantee measurement at power state 2 and using lime var. 1 (at 0% Energo-Gypsum output)
- $k_2 = 0.3$
- S_{E3} = Actual electric power consumption in kW (kWh/h) recorded in guarantee measurement at power state 3 and using lime var. 1
- S_{V63} = Actual pressurized air consumption at 6 bar in Nm³/h recorded in guarantee measurement at power state 3 and using lime var. 1 (at 0% Energo-Gypsum output)
- S_{V33} = Actual pressurized air consumption at 3.5 bar in Nm³/h recorded in guarantee measurement at power state 3 and using lime var. 1 (at 0% Energo-Gypsum output)
- $k_3 = 0.38$
- S_{E4} = Actual electric power consumption in kW (kWh/h) recorded in guarantee measurement at power state 4 and using lime var. 1
- S_{V64} = Actual pressurized air consumption at 6 bar in Nm³/h recorded in guarantee measurement at power state 4 and using lime var. 1 (at 0% Energo-Gypsum output)
- S_{V34} = Actual pressurized air consumption at 3.5 bar in Nm³/h recorded in guarantee measurement at power state 4 and using lime var. 1 (at 0% Energo-Gypsum output)
- $k_4 = 0.12$
- $S_{E_{max2}}$ = Actual electric power consumption in kW (kWh/h) recorded in guarantee measurement at power state 1 and using lime var. 2
- $S_{V6_{max2}}$ = Actual pressurized air consumption at 6 bar in Nm³/h recorded in guarantee measurement at maximum power state and using lime var. 2 (at 0% Energo-Gypsum output)
- $S_{V3_{max2}}$ = Actual pressurized air consumption at 3.5 bar recorded in guarantee measurement at maximum power state and using lime var. 2 (at 0% Energo-Gypsum output)
- $k_{max2} = 0.04$
- $p_{AP} = 1$

Weighted value of guaranteed consumption values shall be determined using the formula:

$$G_V = [(k_{max1} \times G_{E_{max1}} + k_1 \times G_{E1} + k_2 \times G_{E2} + k_3 \times G_{E3} + k_4 \times G_{E4} + k_{max2} \times G_{E_{max2}}) + (k_{max1} \times G_{V6_{max1}} + k_1 \times G_{V61} + k_2 \times G_{V62} + k_3 \times G_{V63} + k_4 \times G_{V64} + k_{max2} \times G_{V6_{max2}}) \times 0.115 + (k_{max1} \times G_{V3_{max1}} + k_1 \times G_{V31} + k_2 \times G_{V32} + k_3 \times G_{V33} + k_4 \times G_{V34} + k_{max2} \times G_{V3_{max2}}) \times 0.102] \times p_{AP}$$

Where the individual terms are:

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- G_V = Weighted value of guaranteed consumption values
- $G_{E_{max1}}$ = Guaranteed electric power consumption in kW (kWh/h) at maximum power state and using lime var. 1
- $G_{V6_{max1}}$ = Guaranteed pressurized air consumption at 6 bar in Nm³/h at maximum power state and using lime var. 1 (at 0% Energo-Gypsum output)
- $G_{V3_{max1}}$ = Guaranteed pressurized air consumption at 3.5 bar at maximum power state and using lime var. 1 (at 0% Energo-Gypsum output)
- k_{max1} = 0.04
- G_1 = Guaranteed electric power consumption in kW (kWh/h) at power state 1 and using lime var. 1
- G_{V61} = Guaranteed pressurized air consumption at 6 bar in Nm³/h at power state 1 and using lime var. 1 (at 0% Energo-Gypsum output)
- G_{V31} = Guaranteed pressurized air consumption at 3.5 bar at power state 1 and using lime var. 1 (at 0% Energo-Gypsum output)
- k_1 = 0.12
- G_{E2} = Guaranteed electric power consumption in kW (kWh/h) at power state 2 and using lime var. 1
- G_{V62} = Guaranteed pressurized air consumption at 6 bar in Nm³/h at power state 2 and using lime var. 1 (at 0% Energo-Gypsum output)
- G_{V32} = Guaranteed pressurized air consumption at 3.5 bar at power state 2 and using lime var. 1 (at 0% Energo-Gypsum output)
- k_2 = 0.3
- G_{E3} = Guaranteed electric power consumption in kW (kWh/h) at power state 3 and using lime var. 1
- G_{V63} = Guaranteed pressurized air consumption at 6 bar in Nm³/h at power state 3 and using lime var. 1 (at 0% Energo-Gypsum output)
- G_{V33} = Guaranteed pressurized air consumption at 3.5 bar at power state 3 and using lime var. 1 (at 0% Energo-Gypsum output)
- k_3 = 0.38
- G_{E4} = Guaranteed electric power consumption in kW (kWh/h) at power state 4 and using lime var. 1
- G_{V64} = Guaranteed pressurized air consumption at 6 bar in Nm³/h at power state 4 and using lime var. 1 (at 0% Energo-Gypsum output)
- G_{V34} = Guaranteed pressurized air consumption at 3.5 bar at power state 4 and using lime var. 1 (at 0% Energo-Gypsum output)
- k_4 = 0.12
- $G_{E_{max2}}$ = Guaranteed electric power consumption in kW (kWh/h) at power state 1 and using lime var. 2
- $G_{V6_{max2}}$ = Guaranteed pressurized air consumption at 6 bar in Nm³/h at maximum power state and using lime var. 2 (at 0% Energo-Gypsum output)

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- G_{V3max2} = Guaranteed pressurized air consumption at 3.5 bar at maximum power state and using lime var. 2 (at 0% Energo-Gypsum output)
- $k_{max2} = 0.04$
- $p_{AP} = 1$

- 42.2.8 The contractual penalty for failing to meet the guaranteed parameters given in Items 2.5.1 through 2.5.12 of Supplement 2 to the CONTRACT (Compressed air consumption from PURCHASER sources) shall be calculated and included in the contractual penalties pursuant to Section 42.2.7 of the CONTRACT.
- 42.2.9 For failing to meet the guaranteed parameter given in Item 2.5.13 of Supplement 2 to the CONTRACT (Average hourly compressed air consumption at 6 bar for dry hydrate transport route at 13 000 kg/h), the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 14,500.00 for each 1 Nm³/h by which the actual consumption value exceeds the value of the guaranteed consumption.
- 42.2.10 For failing to meet the guaranteed parameter given in Item 2.5.14 of Supplement 2 to the CONTRACT (Average hourly compressed air consumption at 3.5 bar for dry hydrate transport route at 13 000 kg/h), the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 12,800.00 for each 1 Nm³/h by which the actual consumption value exceeds the value of the guaranteed consumption.
- 42.2.11 For failing to meet the guaranteed parameters given in Items 2.7.1 through 2.7.3 of Supplement 2 to the CONTRACT (Total water consumption – at 0% Energo-Gypsum output), the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 97,600.00 for each, even begun, 0.1 t/h by which the weighted value of actual consumption values exceeds the weighted guaranteed consumption value.

Weighted value of actual values shall be determined using the formula:

$$S_V = (k_{max1} \times S_{max1} + k_2 \times S_2 + k_{max2} \times S_{max2})$$

Where the individual terms are:

- S_V = Weighted value of actual values
- S_{max1} = Actual value at maximum power state and using lime var. 1
- $k_{max1} = 0.04$
- S_2 = Actual value at power state 2 and using lime var. 1
- $k_2 = 0.92$
- S_{max2} = Actual value at power state 1 and using lime var. 2
- $k_{max2} = 0.04$

Weighted value of guaranteed values shall be determined using the formula:

$$G_V = (k_{max1} \times G_{max1} + k_2 \times G_2 + k_{max2} \times G_{max2})$$

Where the individual terms are:

- G_V = Weighted value of guaranteed values
- G_{max1} = Guaranteed value at maximum power state and using lime var. 1
- $k_{max1} = 0.04$
- G_2 = Guaranteed value at power state 2 and using lime var. 1
- $k_2 = 0.92$
- G_{max2} = Guaranteed value at power state 1 and using lime var. 2
- $k_{max2} = 0.04$

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- 42.2.12 For failing to achieve WORK guaranteed availability as given in Item 2.8.1 of Supplement 2 to the CONTRACT (WORK Availability) during the 1st year of operation, the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 13,800.00 for each, even begun, one (1) hour by which the actual availability of the WORK for the year falls short of the guaranteed availability for the year. Furthermore, if the actual value falls short of the limit value given in Item 2.8.1 of Supplement 2 to the CONTRACT, the PURCHASER shall, in addition to the contractual penalty, have the right to withdraw from the CONTRACT.
- 42.2.13 For failing to achieve WORK guaranteed availability as given in Item 2.8.2 of Supplement 2 to the CONTRACT (WORK Availability) during the 2nd year of operation, the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 61,900.00 for each, even begun, one (1) hour by which the actual availability of the WORK for the year falls short of the guaranteed availability for the year. Furthermore, if the actual value falls short of the limit value given in Item 2.8.2 of Supplement 2 to the CONTRACT, the PURCHASER shall, in addition to the contractual penalty, have the right to withdraw from the CONTRACT.
- 42.2.14 For failing to achieve WORK guaranteed availability as given in Item 2.8.2 of Supplement 2 to the CONTRACT (WORK Availability) during the 3rd year of operation, the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 61,900.00 for each, even begun, one (1) hour by which the actual availability of the WORK for the year falls short of the guaranteed availability for the year. Furthermore, if the actual value falls short of the limit value given in Item 2.8.2 of Supplement 2 to the CONTRACT, the PURCHASER shall, in addition to the contractual penalty, have the right to withdraw from the CONTRACT.
- 42.2.15 Failure to achieve any of the guaranteed parameters given in Supplement 2 to the CONTRACT in Items:

2.1.1	SO ₂
2.1.2	TZL behind absorber
2.1.3	TZL behind LF in dry-chimney operation (behind each boiler)
2.1.5	HCl
2.1.6	HF
2.1.8	Condition of minimum temperature at stack (outlet)
2.1.9	Hg
2.1.10	NO _x
2.1.11	CO
2.9	Noise

shall be considered to constitute a material breach of the CONTRACT on the part of the CONTRACTOR. In that event, the PURCHASER may refuse to accept the WORK and / or withdraw from the CONTRACT and / or have the WORK brought into compliance with the CONTRACT at the CONTRACTOR's expense, unless the latter is performed by the CONTRACTOR pursuant to Section 29.2.4 of the CONTRACT, without limiting the PURCHASER's other rights under the CONTRACT, including the right to be paid contractual penalties and to reimbursement for damages by the CONTRACTOR.

- 42.2.16 In the event that a particular parameter has been determined during TEST "A" to not have been achieved, and therefore a breach of CONTRACT arises, but the defect in question does not impede the safe and reliable operation of the WORK, the PURCHASER may, at its

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own discretion, declare the CONTRACTOR's payment of the relevant contractual penalties, as defined above, to be sufficient satisfaction of the PURCHASER's claims in relation to such a defect, and that therefore, once the contractual penalty has been paid, the PURCHASER shall thereafter refrain from requiring the CONTRACTOR to change or modify the WORK so as to remedy that particular defect.

- 42.2.17 A final accounting of all contractual penalties for failure to achieve guaranteed parameters shall be made once TEST "B" has been performed. In the event that TEST "B" measures values inferior to those found during TEST "A", the CONTRACTOR shall pay to the PURCHASER, in addition to contractual penalties already paid, further contractual penalties corresponding to the difference in the values measured by TEST "A" and by TEST "B", to be evaluated separately for each guaranteed parameter. If, however, TEST "B" finds values superior to those found by TEST "A", the CONTRACTOR shall thereby have no automatic right to be paid bonuses or reimbursements of any kind by the PURCHASER.
- 42.2.18 In the event that total contractual penalties levied under Sections 42.2.2 through 42.2.14 of the CONTRACT reach fifteen per cent (15%) of the CONTRACT PRICE, the PURCHASER may withdraw from the CONTRACT without renouncing any of its other rights under the CONTRACT, including rights to the payment of contractual penalties, reimbursement of damages, and drawdown against the bank guarantee for the WORK.
- 42.2.19 In the event that the GUARANTEE MEASUREMENT finds parameter values superior to those specified in the CONTRACT, the PURCHASER shall not be required to provide benefits or compensation of any kind to the CONTRACTOR.
- 42.3 CONTRACTUAL penalties for breaches of selected CONTRACTOR obligations
- 42.3.1 For material breaches of the "Requirements on Suppliers" given in Supplement 11 to the CONTRACT, the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK five (5) thousand, for each instance of breach; this applies to material breaches for which a penalty is not specified directly in the Requirements on Suppliers.
- 42.3.2 For extension of planned shutdowns pursuant to Section 24.3 of the CONTRACT beyond the period set by the PURCHASER pursuant to Section 24.4 of the CONTRACT, for reasons attributable to the CONTRACTOR, the CONTRACTOR shall be liable to pay a contractual penalty in the amount of CZK 10,000.00 for every, even begun, 2 hours of shutdown extension.
- 42.3.3 In the event of breach of Section 18 of the CONTRACT attributable to the CONTRACTOR, the PURCHASER shall be entitled to be paid a contractual penalty in the amount of CZK two hundred (200) thousand per instance of breach, unless the breach in question is deemed completely immaterial.
- 42.4 Common provisions for contractual penalties
- 42.4.1 The PURCHASER's entitlement to the payment of contractual penalties shall not be conditioned on any formal steps of the PURCHASER other than written notice to the CONTRACTOR to the effect that a contractual penalty is being levied, which shall include the rationale and calculation for the penalty.
- 42.4.2 The PURCHASER may surrender its right to any individual contractual penalty under the CONTRACT, without this affecting any of its other rights thereunder.
- 42.4.3 The CONTRACTOR shall pay all contractual penalties levied by direct bank transfer into the PURCHASER's account within forty-five (45) days from receipt of the PURCHASER's invoice for the amount. The PURCHASER may, particularly if the CONTRACTOR fails to pay a duly levied contractual penalty within the period specified, set off its claim to the payment of such penalty against the following or any other subsequent payment due to the CONTRACTOR, or else draw down for the amount against the bank guarantee for the WORK.

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- 42.4.4 Unless agreed otherwise elsewhere in the CONTRACT, payment of contractual penalties by the CONTRACTOR or alternatively the use of part or the entirety of the bank guarantee for the WORK for that purpose by the PURCHASER does not relieve the CONTRACTOR of any of its other obligations under the CONTRACT.
- 42.4.5 The total amount of contractual penalties that may be levied by the PURCHASER against the CONTRACTOR under this Section 42 of the CONTRACT shall be limited to the equivalent of twenty-five (25) per cent of the CONTRACT PRICE for the WORK. No such limitation shall apply, however, to contractual penalties due as a result of felony, intent, or gross negligence.
- 42.4.6 The CONTRACTOR shall be liable to reimburse the PURCHASER for damages even in excess of the contractual penalties agreed.

43. LIABILITY FOR DEFECTS, QUALITY GUARANTEE

- 43.1 The CONTRACTOR shall provide the PURCHASER with warranty (the WARRANTY PERIOD) for quality; i.e., shall warrant that the WORK as a whole and all parts thereof are free of any and all defects, material and legal. The WORK or a part thereof shall be considered defective whenever non-conforming to the results specified in the CONTRACT, the WORK's purpose and use as given in the CONTRACT, or lacks the parameters and properties explicitly agreed in the CONTRACT or required by general legislation and CSN standards effective at the time of the WORK's execution. The WARRANTY PERIOD, as further specified below in this Section 43 of the CONTRACT, shall commence on the day of WORK PROVISIONAL ACCEPTANCE in the sense of Section 30 of the CONTRACT.

43.1.1 Materials Warranty

- (a) The CONTRACTOR shall provide the PURCHASER with warranty (the WARRANTY PERIOD) for the proper construction, good quality, correct material choices, and due professional care taken with the WORK, in the duration of:
- i) Twenty-four (24) months on the technology systems of the WORK (excepting WORK systems under Section 43.1.1-a (ii) below)
 - ii) thirty-six (36) months on the following technology systems of the WORK:
 - interior protection of absorber area, including internal structure and systems
 - stirrer plugs
 - interior protection of wet flue and chimney sections
 - interior protection of pipes and recirculation pumps
 - iii) sixty (60) months for the structural portions of the WORK.
- (b) The CONTRACTOR shall guarantee the structural quality of all systems in line with the state of technology as of the signing of the CONTRACT, with regard to operational, maintenance, and repair requirements. The CONTRACTOR shall take particular care to minimize wear through appropriate selection of materials and finishes.
- (c) The CONTRACTOR shall guarantee a subsystem design lending itself to replacement of rapid-wear parts during operation between planned revisions without system shutdown.

43.1.2 Completeness Warranty

The CONTRACTOR shall provide the PURCHASER with warranty for the completeness and correctness of documentation and sources prepared for and submitted to the PURCHASER in the execution of the WORK. Deliveries of GOODS and performance of

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WORKS are part of the CONTRACTOR's obligations even if not explicitly listed in the CONTRACT but demonstrably required for the manufacture, flawless operation, monitoring, and maintenance, and operational and personnel safety of the system in question (regulations, official requirements, etc.).

43.1.3 Functionality Warranty

- (a) The CONTRACTOR shall provide the PURCHASER with a WARRANTY PERIOD for the correct functioning of the WORK in the duration of sixty (60) months.
- (b) In the event that, during the WARRANTY PERIOD, it becomes apparent that the WORK or a part thereof is incapable of performing its particular function despite professional repair, performed by the PURCHASER once materials warranty runs out, then the CONTRACTOR shall, at its own expense, take such measures as may be required to restore correct functioning and ensure guaranteed parameters are met. Such measures shall be taken by the CONTRACTOR upon consultation with the PURCHASER at a suitable time.

43.1.4 Performance Warranty

The CONTRACTOR shall provide the PURCHASER with warranty for the WORK's fulfillment of the guaranteed parameters given in Supplement 2 to the CONTRACT during a twenty-four (24) month WARRANTY PERIOD.

- 43.2 The CONTRACTOR shall not be held liable for duly made claims of warranty during the WARRANTY PERIOD if it can demonstrate that the defect in question arose in direct result of the PURCHASER's operation of the WORK or a part thereof during the WARRANTY PERIOD in a manner non-compliant with operational guidelines and the technical conditions agreed in the CONTRACT. Until such time as the PURCHASER is demonstrated to have been at fault, it shall be assumed that the CONTRACTOR is. Without regard for who is at fault for a defect being claimed under warranty, the CONTRACTOR shall commence and carry on such WORKS as are required to remedy the defect, so as to remedy the defect without undue delay. In the event that the CONTRACTOR can demonstrate its lack of fault in relation to the defect, the PURCHASER shall reimburse the CONTRACTOR for all reasonable and demonstrable expenses related to that defect's remedy.

The PURCHASER shall provide the CONTRACTOR with all required cooperation, particularly with information on the system's operation, power states, etc.

- 43.3 Upon request, the PURCHASER shall provide the CONTRACTOR with access to the WORK for purposes of investigating the cause of a defect.

- 43.4 In the event that, during the WARRANTY PERIOD, it becomes apparent that the WORK has defects, the PURCHASER may, without limiting its other rights under the CONTRACT:

- (a) Require defect removal by repair of the WORK, if, in the PURCHASER's opinion, the defect in question is repairable; and / or
- (b) Require defect removal by replacement of the defective parts of the WORK, if, in the PURCHASER's opinion, the defect in question is not repairable per (a) above; and / or
- (c) Require the remedy of any legal defects.

If a defect cannot be removed in any of the ways given in (a) through (c) above, the PURCHASER may, at its own discretion and with regard to the nature of the defect:

- (i) Require a reasonable discount of the CONTRACT PRICE for the WORK; or
- (ii) Withdraw from the CONTRACT, in the case of non-removable defects impeding the operation of the WORK; or

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(iii) Have defects removed by a third party at the CONTRACTOR's expense.

The PURCHASER may change its choice of any of the claim types given above or combine claim types at any time.

Before commencing works to remedy a defect, the CONTRACTOR shall report the cause of the defect and have the time and manner of removal (and any counterclaims) approved by the PURCHASER.

43.5 In the case given in Section 43.4-a and /or 43.4-b of the CONTRACT, the CONTRACTOR shall present itself at the site of the defect and commence works to remedy the defect:

(a) Within twenty-four (24) hours from the defect being reported, for major defects impeding the safe and reliable operation of the WORK;

(b) Within forty-eight (48) hours from the defect being reported, for defects not impeding the safe and reliable operation of the WORK, unless agreed otherwise with regard to the nature of the defect.

43.6 In the event of defect removal pursuant to Section 43.4 of the CONTRACT, the CONTRACTOR shall remedy the defect without delay, but no later than within 30 DAYS, unless agreed otherwise with regard to the nature of the defect.

43.7 In the event that the same defect occurs on the same system three times during the WARRANTY PERIOD, the CONTRACTOR shall, without undue delay, make design changes to the defective system and update the actual-state documentation.

43.8 In the event that the CONTRACTOR fails to remedy duly claimed defects of the WORK within the timeframe given in Section 43.5 through 43.7 of the CONTRACT, or that the CONTRACTOR refuses to remedy such defects within that timeframe, the PURCHASER may, with prior notice to the CONTRACTOR, remedy the defect on its own or have it remedied, at the CONTRACTOR's expense, without limiting any of the PURCHASER's rights under the CONTRACT. The CONTRACTOR shall then reimburse the PURCHASER for all demonstrable and reasonable costs related to the defect and its removal by or on behalf of the PURCHASER, within forty-five (45) days of receipt of the PURCHASER's invoice for the amount. In the event of non-payment of such an invoice, the PURCHASER may satisfy its claims by drawing down against the bank guarantee for the WORK.

43.9 In the event of repair or replacement of defective parts of the WORK during the WARRANTY PERIOD, the WARRANTY PERIOD for the WORK or the relevant part thereof shall be extended by the amount of time for which the WORK or its relevant part could not be operated as a result of the defect, provided warranty for the defect was claimed in a proper and timely manner. The CONTRACTOR shall, at its own expense, extend the term of the bank guarantee for the WORK by a corresponding period – in the event of failure to do so, the PURCHASER may, fourteen (14) days before the expiry of the existing bank guarantee for the WORK, draw down against that guarantee in full or in part, without limiting its other rights under the CONTRACT. All amounts withdrawn from the bank guarantee in this manner shall be returned to the CONTRACTOR without delay once the CONTRACTOR submits to the PURCHASER a duly extended bank guarantee.

43.10 Replaced or newly-installed parts of the WORK shall be covered by a WARRANTY PERIOD of twenty-four (24) months, beginning on the day of replacement / installation.

43.11 The acceptance of new deliveries made as part of defect removal and defect warranties relating to such deliveries shall be governed by the relevant CONTRACTOR provisions governing the place and manner in which warranty claims may be made and fulfilled.

43.12 The removal of any defect shall not affect the PURCHASER's right to be paid contractual penalties and reimbursed for damages.

43.13 The periods specified in Section 43.5 and 43.6 of the CONTRACT shall commence on the

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DAY the notice of defect is delivered to the CONTRACTOR, where notices sent by e-mail shall be considered delivered on the DAY and hour that the e-mail in question was sent, while notices sent by registered post shall be considered delivered on the third business day from the date given on the post office stamp on the sender's receipt.

- 43.14 None of the provisions of this Section 43 relieve the CONTRACTOR of any of its other obligations under the CONTRACT or general legislation.

44. REIMBURSEMENT FOR DAMAGES, LIMITATION OF LIABILITY

- 44.1 The PURCHASER may require the CONTRACTOR to reimburse the PURCHASER, and the CONTRACTOR shall then be required to pay, for any damages caused to the PURCHASER by the CONTRACTOR and / or its SUBCONTRACTORS through a breach of their obligations under the CONTRACT or in relation to the performance of the CONTRACT, including cases of breach under the CONTRACT covered by contractual penalty provisions, and then even in amounts exceeding such contractual penalties. Reimbursement for damages (indemnity) shall be governed by the provisions of Section 2894 *et seq.* of the Czech Civil Code.
- 44.2 Without regard for the provisions of Section 44.1 of the CONTRACT, the Parties hereby declare (pursuant to Section 2898 (on *Limits on CONTRACTUAL Limitations of Indemnity*) of the Czech Civil Code) that the CONTRACTOR's total liability for damages and other costs that may arise in relation to a breach of any one (1) or several contractual or legal obligations by the CONTRACTOR in relation to the performance of the CONTRACT, shall not exceed one hundred per cent (100%) of the total CONTRACT PRICE. The Parties therefore declare the maximum obligation of the CONTRACTOR to reimburse for damages and other costs, including the payment of contractual penalties, to be limited by the amount equivalent to one hundred per cent (100%) of the total CONTRACT PRICE. The Parties further declare that reimbursement for indirect and subsequent damages, lost profits, lost production, lost markets, and / or lost goodwill shall be limited to a maximum of twenty-five per cent (25%) of the total CONTRACT PRICE.

45. REIMBURSEMENT FOR PATENT CLAIMS

- 45.1 Provided that the PURCHASER adheres to the provisions of Section 45.2 of the CONTRACT, the CONTRACTOR shall reimburse the PURCHASER for any and all damages, claims of warranty or other claims, losses, and expenses that may arise to the PURCHASER as a result of any breach or claimed breach of any rights, trademarks, copyrights, or other intellectual property rights in relation to the equipment, works, and goods used in the WORK or in relation to the same, that may be registered or otherwise valid in the Czech Republic as of the date of signing of the CONTRACT.
- 45.2 In the event any proceedings or claims are brought against the PURCHASER as a result of the matters listed in Section 45.1 of the CONTRACT, the PURCHASER shall notify the CONTRACTOR, in writing, to that effect, and the CONTRACTOR shall, at its own expense but the PURCHASER's name, participate in such proceedings and handle such claims and take steps to resolve such proceedings and claims. The PURCHASER shall, upon request, provide the CONTRACTOR with all reasonable cooperation in handling such claims and proceedings. The CONTRACTOR shall reimburse the PURCHASER for any and all demonstrable expenses related to such cooperation.
- 45.3 In the event that the CONTRACTOR fails to notify the PURCHASER, within ten (10) days of receipt of notice per the preceding paragraph, that it has commenced participation in the relevant proceedings or handling of the relevant claims, the PURCHASER may enter such proceedings in its own name and require the CONTRACTOR to reimburse all demonstrable

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and reasonable expenses incurred in relation thereto. In the event that the CONTRACTOR does notify the PURCHASER, within ten (10) days of receipt of notice per the preceding paragraph, that it has commenced participation in the relevant proceedings or handling of the relevant claims, the PURCHASER may not subsequently make any statements that might prejudice the defense against such claims or proceedings.

- 45.4 The Party entitled to claims under this Section 45 of the CONTRACT shall use all reasonable means to mitigate any losses or damage that might arise. In the event of failure to do so, the other Party's responsibility shall be proportionally reduced.
- 45.5 The CONTRACTOR's obligations under this Section of the CONTRACT shall remain in effect vis-à-vis any potential future successors to ownership of the WORK, provided that such future successors honor the PURCHASER's obligations under Section 45.2 of the CONTRACT.

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G. RISK ALLOCATION

46. TRANSFER OF OWNERSHIP

- 46.1 The ownership rights for GOODS (including documentation) that are part of the WORK, unless already held by the PURCHASER, shall transfer from the CONTRACTOR to the PURCHASER upon their documented delivery to the SITE at the PURCHASER's premises; for SERVICES and WORKS, upon their documented acceptance by the PURCHASER; for RIGHTS OF USE, upon their provision pursuant to the CONTRACT, or upon payment, whichever occurs earlier. Where the CONTRACTOR works with or otherwise handles PURCHASER property, the CONTRACTOR may only do so insofar as it is required to duly execute the WORK.
- 46.2 Ownership rights to CONTRACTOR CONSTRUCTION EQUIPMENT used by the CONTRACTOR and /or SUBCONTRACTORS in the execution of the WORK shall remain with the CONTRACTOR or the relevant SUBCONTRACTOR.
- 46.3 Any ownership rights that have not been transferred in accordance with the above shall transfer from the CONTRACTOR to the PURCHASER upon the signing of the WORK PROVISIONAL ACCEPTANCE Protocol pursuant to Section 30 of the CONTRACT.

47. DUE CARE OF THE WORK, TRANSFER OF LIABILITY FOR DAMAGE TO THE WORK

- 47.1 Regardless of ownership rights transfers pursuant to Section 46.1 of the CONTRACT, the risk of damage to the WORK, including relevant PURCHASER systems, as well as the risks of loss, damage, or any other devaluation, shall transfer from the CONTRACTOR to the PURCHASER upon the Parties' signing of the WORK PROVISIONAL ACCEPTANCE Protocol. This does not affect the CONTRACTOR's obligations with regard to warranty.
- 47.2 In the event of damage, loss, or any other devaluation of the WORK or any part thereof occurring before risks transfer to the PURCHASER, excepting cases specified in Section 50.4 of the CONTRACT, the CONTRACTOR shall, at its own expense, remedy the loss, damage, or other devaluation and shall ensure the WORK and all parts thereof, including GOODS, are returned in all respects to a flawless condition compliant with the terms of the CONTRACT. Without regard for the above, if the damage, loss, or devaluation of the WORK or a part thereof is attributable to the PURCHASER, the PURCHASER shall reimburse the CONTRACTOR for all demonstrable, reasonable expenses that may arise to the CONTRACTOR in relation with the remedy of the damage in question; in the event that the damage affects other obligations under the CONTRACT, the Parties shall proceed pursuant to Section 51 of the CONTRACT.
- 47.3 The CONTRACTOR shall also be liable for all losses and damage to the WORK and the PURCHASER's or third parties' property caused by the CONTRACTOR or its SUBCONTRACTORS during the execution of WORKS and SERVICES or in relation to the fulfillment of their obligations under the CONTRACT, including obligations pursuant to Section 43 of the CONTRACT.

48. PROPERTY LOSS AND DAMAGE, PERSONNEL ACCIDENT AND INJURY, CLAIM SETTLEMENT

- 48.1 The CONTRACTOR shall indemnify and hold harmless the PURCHASER and its employees for any claims, proceedings, sanctions, or activities ordered in administrative

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proceedings, as well as for all claims of warranty, damage, or other claims, losses, costs, and expenses of any kind, including costs of legal representation in matters of loss of life or limb or of loss or damage to any property, arising in relation to the execution of the WORK for reasons attributable to the CONTRACTOR.

- 48.2 The PURCHASER shall indemnify and hold harmless the CONTRACTOR and its employees for any claims, proceedings, sanctions, or activities ordered in administrative proceedings, as well as for all claims of warranty, damage, or other claims, losses, costs, and expenses of any kind, including costs of legal representation in matters of loss of life or limb or of loss or damage to any property, arising in relation to the execution of the WORK for reasons attributable to the PURCHASER.
- 48.3 In the event of any proceedings or claims, of warranty or otherwise, against the PURCHASER arising for reasons attributable to the CONTRACTOR pursuant to Section 48.1 of the CONTRACT, the PURCHASER shall notify the CONTRACTOR of the matter, in writing, and the CONTRACTOR shall, at its own expense but in the PURCHASER's name, take all steps and participate in all negotiations that may be required for the proceedings against the PURCHASER to be discontinued (if applicable), or, failing that, for the impact upon the PURCHASER to be minimized.
- 48.4 In the event of any proceedings or claims, of warranty or otherwise, against the CONTRACTOR arising for reasons attributable to the PURCHASER pursuant to Section 48.1 of the CONTRACT, the CONTRACTOR shall notify the PURCHASER of the matter, in writing, and the PURCHASER shall, at its own expense but in the CONTRACTOR's name, take all steps and participate in all negotiations that may be required for the proceedings against the CONTRACTOR to be discontinued (if applicable), or, failing that, for the impact upon the CONTRACTOR to be minimized.
- 48.5 In the event that the CONTRACTOR fails to notify the PURCHASER, within seven (7) days of receipt of notification as per the above, to the effect that the CONTRACTOR shall proceed pursuant to Section 48.3 of the CONTRACT, then the PURCHASER may, at its own discretion, decide to enter such proceedings in its own name but at the CONTRACTOR's expense. In the event that the CONTRACTOR does so notify the PURCHASER, within seven (7) days of receipt of notice per the above, the PURCHASER may not subsequently make any statements that might compromise the CONTRACTOR's position in such proceedings or claims procedures. Depending on the particular situation, the seven (7) day period may be shortened.
- 48.6 In the event that the PURCHASER fails to notify the CONTRACTOR, within seven (7) days of receipt of notification as per the above, to the effect that the PURCHASER shall proceed pursuant to Section 48.3 of the CONTRACT, then the CONTRACTOR may, at its own discretion, decide to enter such proceedings in its own name but at the PURCHASER's expense. In the event that the PURCHASER does so notify the CONTRACTOR, within seven (7) days of receipt of notice per the above, the CONTRACTOR may not subsequently make any statements that might compromise the PURCHASER's position in such proceedings or claims procedures. Depending on the particular situation, the seven (7) day period may be shortened.
- 48.7 The PURCHASER shall, upon request, provide the CONTRACTOR with all reasonable cooperation in proceedings under Section 48.3 of the CONTRACT. The CONTRACTOR shall reimburse the PURCHASER for any and all demonstrable expenses related to such cooperation.
- 48.8 The CONTRACTOR shall, upon request, provide the PURCHASER with all reasonable cooperation in proceedings under Section 48.3 of the CONTRACT. The PURCHASER shall reimburse the CONTRACTOR for any and all demonstrable expenses related to such cooperation.

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- 48.9 The Party entitled to claims under this Section 48 of the CONTRACT shall use all reasonable means to mitigate any losses or damage that might arise. In the event of failure to do so, the other Party's responsibility shall be proportionally reduced.
- 48.10 Before commencing any works, the Parties shall inform each other of relevant risks. The CONTRACTOR, through its authorized representative, shall submit a written or electronic risk assessment document to the PURCHASER's Department of WORK and Environmental Safety, and shall receive the PURCHASER's risk assessment document on that occasion. This obligation applies equally to the CONTRACTOR's SUBCONTRACTORS.
- 48.11 The CONTRACTOR shall notify the PURCHASER, without undue delay, of any injuries that may occur at the workplace. The CONTRACTOR shall request the PURCHASER's representative's cooperation in investigating any workplace injuries that may occur in the execution of the WORK.

49. INSURANCE

- 49.1 The CONTRACTOR shall, at its own expense, enter into and maintain, or cause to be entered into and maintained, a construction and assembly insurance policy (CAR / EAR) in the scope specified below, throughout the construction and / or assembly of the WORK, up until FINAL ACCEPTANCE of the technology section of the WORK pursuant to Section 32.3 of the CONTRACT.
- (a) Insurance of CONTRACT subject
- This insurance shall cover physical losses and damage to the WORK and all parts thereof arising before the PURCHASER's PROVISIONAL ACCEPTANCE of the WORK. Between the date of signing of the PROVISIONAL ACCEPTANCE Protocol and the date of signing of the FINAL ACCEPTANCE Protocol, this insurance shall cover physical losses and damage to the WORK and all parts thereof arising from activities of the CONTRACTOR and / or its SUBCONTRACTORS. Such insurance shall not cover physical losses or damage to SITE FACILITIES, CONSTRUCTION EQUIPMENT and tools, or construction and other machinery owned by the CONTRACTOR or its SUBCONTRACTORS.
- (b) Insurance of third-party liability, including cross-liability
- This insurance shall cover all loss of life or limb suffered by third parties (including PURCHASER employees) and losses and damage to third-party property (including PURCHASER property and any and all parts of the WORK already accepted by the PURCHASER) that may arise in relation to the execution of the WORK.
- 49.2 The coverage limit for insurance of PURCHASER, CONTRACTOR, and SUBCONTRACTOR third-party liability shall be no less than two hundred (200) million Czech koruna, with policyholder participation of no more than ten (10) per cent. The coverage limit for insurance of CONTRACT subject shall be equal to the CONTRACT PRICE for the WORK. In the event the CONTRACT PRICE changes during the performance of the CONTRACT, in a manner consistent with the CONTRACT, then the CONTRACTOR shall change its coverage limit to match the new total CONTRACT PRICE amount.
- 49.3 All above specified policies shall be entered into with an insurer acceptable to and approved by the PURCHASER, on terms acceptable to and approved by the PURCHASER; the PURCHASER shall not refuse such approval without reason. The CONTRACTOR shall submit the full insurance terms, including any contractual terms, for the PURCHASER's approval no later than twenty-one (21) days before the planned date of insurance contract signing. The PURCHASER shall adhere to all insurance terms applicable to it and approved by it pursuant to the present paragraph, particularly with regard to work and fire

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- 49.4 Construction and assembly insurance shall be entered into with an insurer or insurers of good standing authorized to offer such policies under Act No. 277/2009, the Act on Insurance and Amendment of Certain Other Acts (the Insurance Act), as amended.
- 49.5 The PURCHASER and the CONTRACTOR's SUBCONTRACTORS shall be listed as co-policyholders / co-beneficiaries in all insurance contracts entered into by the CONTRACTOR pursuant to Section 49.1 of the CONTRACT.
- 49.6 The CONTRACTOR shall, at its own expense, enter into and maintain a professional liability insurance policy throughout the construction and / or assembly of the WORK, up until the construction SITE has been fully disposed of pursuant to Section 30.4 of the CONTRACT. This policy shall cover all loss of life or limb of third parties (including PURCHASER employees) and losses and damage to property (including PURCHASER property, including any parts of the WORK already accepted by the PURCHASER), including net financial losses that may arise in relation to the execution of the WORK due to faults with the CONTRACTOR's design or with other professional activities of the CONTRACTOR related to the execution of the WORK. The coverage limit of the CONTRACTOR's professional liability insurance shall not be less than fifty (50) million Czech koruna.
- 49.7 Before commencing relevant activities, the CONTRACTOR shall submit to the PURCHASER documentation of its insurance – an insurance certificate (or attestation of insurance, or copy of insurance contract), to demonstrate that it has valid and effective insurance as required. All insurance policies shall provide that the Purchaser is notified, no later than twenty-one (21) days in advance, of any impending cancellation or changes, by all involved insurers. In the event of the CONTRACTOR's failure to comply with the requirements of this Section 49.7 of the CONTRACT, the PURCHASER may, without limiting its other rights under the CONTRACT, enter into the insurance policies required by the CONTRACT, at the CONTRACTOR's expense.
- 49.8 Shipping Insurance
- This insurance shall cover losses and damage to GOODS that may arise during transport from the CONTRACTOR, its SUBCONTRACTORS, or manufacturers (including warehousing for periods common in shipping insurance) to the SITE. Shipping insurance shall cover one hundred (100) per cent of the value of the GOODS being shipped as priced in the CONTRACT.
- 49.9 The CONTRACTOR and its SUBCONTRACTORS are free to enter into any additional insurance related to the WORK, over and above the scope of the mandatory insurance required by this Section 49 of the CONTRACT; however, the price for such insurance are the CONTRACTOR's expense and cannot increase the CONTRACT PRICE.
- 49.10 None of the provisions of the Section 49 of the CONTRACT relieve the CONTRACTOR of its obligations and responsibilities under the CONTRACT.

50. FORCE MAJEURE

- 50.1 The Parties shall not be liable for any full or partial failure to meet their respective obligations under the CONTRACT in the event (and to the extent) that such failure is the result of an exceptional, unforeseeable, insurmountable event or circumstance arising independently of the will of the Parties, as defined in Section 2913, Subs. 2 of the Czech Civil Code. Responsibility shall not, however, be excluded in the event that the circumstance arises only when the Party in question is already delayed in meeting its obligations, or that the circumstance arises from the personal circumstances of the Party.

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- 50.2 For the purposes of this Section, “*force majeure*” shall be defined to mean an exceptional, unpreventable event or circumstance that is outside the control of the Party invoking *force majeure* provisions, that the Party could not reasonably have foreseen when entering into the CONTRACT, and that prevents the Party from fulfilling its obligations under the CONTRACT. Events and circumstances classifiable as *force majeure* shall include, but not be limited to, war, revolution, wildfire, flood, transport embargo, general strike, and industry-wide strike.
- 50.3 A Party claiming *force majeure* shall notify the other Party to that effect, including causes, without delay but no later than five (5) DAYS from the DAY the notifying Party became aware of the *force majeure* situation, via e-mail, with subsequent confirmation by registered post. The same procedure shall be used to notify the other Party when the *force majeure* situation is no longer in effect. Upon request, the Party claiming *force majeure* shall suitably document the claim to the other Party.
- 50.4 Without regard for the CONTRACT’s other provisions, the CONTRACTOR shall not be held liable for loss or damage to the WORK or the PURCHASER’s property due to war, civil unrest, or military or paramilitary operations, invasion, civil war, revolution, martial law or military dictatorship, terrorist actions, confiscation, nationalization, and eminent domain, nuclear criticality events, radiation of manmade nuclear origin, irradiation, or shockwave, insofar as such events might impede the execution of the WORK in Czech Republic territory, such events being outside the CONTRACTOR’s ability to influence and no insurance being normally available against them.
- 50.5 Unless agreed otherwise between the Parties, the execution of CONTRACT obligations shall continue insofar and as long as that is reasonably possible, and the Parties shall further seek alternative means to perform the CONTRACT free of *force majeure* influence. In the event that *force majeure* impacts the CONTRACT PRICE, the WORK timetable, or other CONTRACT provisions, the Parties shall commence negotiations to amend the CONTRACT PRICE, WORK timetable, and / or other affected CONTRACT provisions, pursuant to Section 51 of the CONTRACT.

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H. CHANGES TO THE WORK (CONTRACT)

51. CHANGE PROCEEDINGS

51.1 CHANGE Requests

- 51.1.1 The PURCHASER may propose and subsequently require the CONTRACTOR to carry out any CHANGES, provided the terms of this Section 51 of the CONTRACT are observed.
- 51.1.2 The CONTRACTOR may, during the performance of the CONTRACT, propose to the PURCHASER any CHANGES that the CONTRACTOR may consider essential or beneficial to improving the quality and / or economic efficiency of the WORK. The PURCHASER may, at its discretion, either approve or refuse any such CHANGES proposed by the CONTRACTOR.
- 51.1.3 CHANGES may also arise for other reasons specified in the CONTRACT, particularly those given in Section 3 – Legal Interpretation of the CONTRACT; Section 50 – *Force Majeure*; and Section 52 – Interruption of WORKS.
- 51.1.4 Without regard to the provisions of Sections 51.1.1 and 51.1.2 of the CONTRACT, no changes or modifications to the WORK made essential through a failure of the CONTRACTOR to meet its obligations or required to ensure WORK compliance with the CONTRACT, but not covered by the types of CHANGES specified in Section 51.1.3 of the CONTRACT, shall be considered CHANGES, and shall therefore not affect the CONTRACT PRICE, the WORK timetable, nor any other CONTRACT provisions.

51.2 PURCHASER-Initiated CHANGES

- 51.2.1 In the event that the PURCHASER proposes a CHANGE under Section 51.1.1 of the CONTRACT, the PURCHASER shall send a CHANGE Request to the CONTRACTOR. The CONTRACTOR shall then prepare and, without undue delay but, unless agreed otherwise, no later than within ten (10) days of CHANGE Request receipt, submit to the PURCHASER a preliminary calculation of the costs of making the CHANGE and processing the CHANGE Proposal. This Preliminary Calculation shall further contain the CONTRACTOR's proposed timetable for the completion of the CHANGE Proposal and of the CHANGE itself, including preliminary estimates of the impact on the remainder of the WORK's timetable pursuant to the CONTRACT. Once the PURCHASER has received the Preliminary Calculation and received any clarification or explanation it may require from the CONTRACTOR, the PURCHASER shall either:
 - (a) Non-bindingly accept the CONTRACTOR's Preliminary Calculation, upon which the Parties shall proceed pursuant to Section 51.2.2 of the CONTRACT; or
 - (b) Dispute the CONTRACTOR's Preliminary Calculation and request the CONTRACTOR to reassess its proposal within the timeframe specified by the PURCHASER. If the CONTRACTOR's revised calculation is acceptable to the PURCHASER, the Parties shall then proceed pursuant to Section 51.2.2 of the CONTRACT; otherwise
 - (c) The PURCHASER shall notify the CONTRACTOR of its intention to discontinue CHANGE proceedings.
- 51.2.2 Upon receipt of the PURCHASER's decision pursuant to Section 51.2.1-a or 51.2.1-b of the CONTRACT, the CONTRACTOR shall, within the period agreed, prepare the CHANGE Proposal. The CONTRACTOR shall also prepare a CHANGE Proposal for CHANGES proposed under Sections 51.3.1 and 51.4.1 of the CONTRACT. The CHANGE Proposal shall contain:
 - (a) Detailed description of CHANGE
 - (b) Impact of CHANGE on CONTRACT timetable
 - (c) Impact of CHANGE on other PURCHASER systems

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- (d) Impact of CHANGE on WORK CONTRACT PRICE and / or terms of payment under the CONTRACT
- (e) Impact of CHANGE on WORK technical guarantees
- (f) Impact of CHANGE on other CONTRACT provisions
- (g) Calculation of costs of making the CHANGE
- (h) Proposed method of PURCHASER's payment for CHANGE costs.

51.2.3 Upon receipt of the CHANGE Proposal, the PURCHASER and the CONTRACTOR shall, without delay, reach an agreement on whether or not the proposed CHANGE is to be made. If the PURCHASER decides to carry through with the CHANGE, it shall issue a CHANGE ORDER to the CONTRACTOR within seven (7) days of its decision.

In the event that the PURCHASER is unable to decide within seven (7) days, it shall notify the CONTRACTOR to that effect, including information on when the CONTRACTOR can expect a decision.

51.2.4 In the event that the PURCHASER decides, for whatever reason, not to carry through with the CHANGE, it shall notify the CONTRACTOR to that effect. In that event, the CONTRACTOR shall be entitled to be reimbursed for any demonstrable costs that may have arisen to it in the preparation of the CHANGE Proposal, such reimbursement not to exceed the amount given by the CONTRACTOR in its Preliminary Calculation for the CHANGE Proposal pursuant to Section 51.2.1 of the CONTRACT.

51.2.5 In the event that the PURCHASER and the CONTRACTOR fail to reach consensus on a final price for the CHANGE, or on any other matters discussed in the CHANGE Proposal, within the seven (7) day period specified above, then the PURCHASER may, regardless, order the CONTRACTOR to make the CHANGE via a PRELIMINARY CHANGE ORDER, which can contain any of or all CHANGES to the execution of the WORK requested by the PURCHASER in relation to the CHANGE proceedings at hand. Upon receipt of the PRELIMINARY CHANGE ORDER, the CONTRACTOR shall, without delay and on a technologically reasonable timetable, perform all CHANGES ordered in the PRELIMINARY CHANGE ORDER. The Parties shall then attempt to resolve any open issues that may remain in the CHANGE Proposal.

51.2.6 In the event that the Parties fail to reach agreement within sixty (60) days of the issue of a PRELIMINARY CHANGE ORDER pursuant to Section 51.2.6 of the CONTRACT, the matter may be further handled pursuant to Section 6 of the CONTRACT. Until such time as the Parties either reach an agreement or an enforceable decision is made pursuant to Section 6 of the CONTRACT on the final price of the CHANGE, and / or on any other matters discussed in the CHANGE Proposal, the PRELIMINARY CHANGE ORDER shall be considered to constitute a full and accurate definition of the CHANGE.

51.3 CONTRACTOR-Initiated CHANGES

51.3.1 In the event that the CONTRACTOR is proposing a CHANGE pursuant to Section 51.1.2 of the CONTRACT, it shall submit to the PURCHASER a written CHANGE Proposal, including the rationale for the proposed CHANGE and the information required by Section 51.2.3 of the CONTRACT.

51.3.2 Upon the PURCHASER's receipt of the CHANGE Proposal, the Parties shall proceed as described in Section 51.2.4 of the CONTRACT. If, however, the PURCHASER decides not to accept the CONTRACTOR's CHANGE Proposal pursuant to this Section 51.3 of the CONTRACT, and therefore to not carry through with the CHANGE, the CONTRACTOR shall have no right to claim reimbursement for costs related to the preparation of the CHANGE Proposal.

51.4 General Provisions for CHANGES

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- 51.4.1 CHANGES arising from other changes, particularly from changes in general legislation, due to *force majeure*, and WORKS interruptions, shall be carried out, within reason, pursuant to Section 51.2.1 *et seq.* of the CONTRACT.
- 51.4.2 Without regard to any other provisions of the CONTRACT, all CONTRACTOR claims of increase in the CONTRACT PRICE, reimbursement of additional costs, change of timetable, or any other changes to the CONTRACT, whether resulting from CONTRACT provisions or from legislation, shall be made to the PURCHASER, in writing, no later than thirty (30) days from the moment that the CONTRACTOR becomes aware, or should have become aware if exercising due professional care, of the existence of the particular reason for the increase in the CONTRACT PRICE, additional costs, timetable changes, or other changes to the CONTRACT. In the event that the CONTRACTOR fails to make its claim to the PURCHASER within the period given above, all such claims shall be considered null and void and unenforceable against the PURCHASER. If the CONTRACTOR makes its claims within the period provided, the Parties shall further proceed pursuant to Section 51.3 of the CONTRACT.
- 51.4.3 All CHANGES made to the CONTRACT once signed must comply with Section 222 of Act No. 134/2006, on Public Procurement, as amended.

52. INTERRUPTION OF WORKS

- 52.1 The CONTRACTOR shall, upon the PURCHASER's written request, interrupt WORKS for such a period of time (not exceeding six (6) months) and in such a manner as the PURCHASER may consider necessary; the CONTRACTOR shall duly secure and protect the WORK during such WORKS interruptions.
- 52.2 In the event that an interruption of WORKS pursuant to this Section 52 of the CONTRACT affects the execution of the WORK on the timetable agreed in the CONTRACT, or affects other areas of the CONTRACT, further procedure shall be governed by Section 51 of the CONTRACT. In that event, both Parties shall take reasonable measures to minimize any delay in the WORK's completion. The PURCHASER shall reimburse the CONTRACTOR for any and all related demonstrable, reasonable costs that may arise to the latter in relation to a WORKS interruption, particularly costs of warehousing over two (2) months, conservation, refurbishment, capacity shifting, extension of bank guarantees, extension of CONTRACTOR personnel presence, insurance, etc.; this unless the WORKS interruption is due to reasons attributable to the CONTRACTOR.
- 52.3 While WORKS are interrupted, the CONTRACTOR may not remove from the SITE any GOODS, CONSTRUCTION EQUIPMENT, or WORK components without the PURCHASER's prior written approval.

53. WITHDRAWAL FROM THE CONTRACT

- 53.1 DISCRETIONARY PURCHASER WITHDRAWAL FROM THE CONTRACT
- 53.1.1 The PURCHASER may, at any time and at its own discretion, withdraw from the CONTRACT. Withdrawal under this Section 53.1.1 of the CONTRACT shall be effected via a written notice of withdrawal, which shall be effective upon receipt by the CONTRACTOR, unless a later date is specified therein.
- 53.1.2 Upon receipt of a Notice of Withdrawal pursuant to Section 53.1.1 of the CONTRACT, the CONTRACTOR shall, either immediately or as of the date given in the Notice:
- (a) Cease all further WORKS, excepting any the PURCHASER may have specified in the Notice of Withdrawal for the sole purpose of protecting the already-completed

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- (b) Terminate all subcontracts
- (c) Within a mutually-agreed, technologically reasonable timeframe, remove from the SITE all CONSTRUCTION EQUIPMENT and recall all CONTRACTOR and SUBCONTRACTOR personnel, clear the SITE of all surplus materials, detritus, and waste of any kind, then return the SITE to the PURCHASER in a clean and safe condition
- (d) Once payments pursuant to Section 53.1.3 of the CONTRACT have been made, then:
 - (i) Hand over to the PURCHASER those parts of the WORK that have been completed before the withdrawal date
 - (ii) Transfer to the PURCHASER all rights to completed parts of the WORK, particularly to any GOODS in place as of the date of withdrawal pursuant to Section 53.1.1 of the CONTRACT such as to which the CONTRACTOR may be obligated under other provisions of the CONTRACT to transfer rights to the PURCHASER, and, upon the PURCHASER's request, make all reasonable effort to transfer the CONTRACTOR's subcontracts relating to the WORK to the PURCHASER
 - (iii) Submit to the PURCHASER all documentation created by the CONTRACTOR and its SUBCONTRACTORS in relation to the WORK as of the effective date of the Notice of Withdrawal pursuant to Section 53.1.1 of the CONTRACT such as the CONTRACTOR may be obligated under other provisions of the CONTRACT to submit to the PURCHASER for a WORK in progress.

53.1.3 In the event of PURCHASER withdrawal from the CONTRACT under Section 53.1.1 of the CONTRACT, the PURCHASER shall pay to the CONTRACTOR:

- (a) The portion of the CONTRACT PRICE corresponding to duly completed parts of the WORK, including partially-complete parts in proportion to their degree of completion, as of the effective date of the Notice of Withdrawal. Where a portion of the CONTRACT PRICE cannot be confidently allocated to partially-complete parts of the WORK, the PURCHASER shall reimburse the CONTRACTOR for demonstrable, reasonable expenses instead; and
- (b) All demonstrable and reasonable expenses that the CONTRACTOR may have incurred in the protection of the WORK pursuant to Section 53.1.2-a of the CONTRACT; and
- (c) All demonstrable and reasonable expenses that the CONTRACTOR may have incurred from WORKS pursuant to Section 53.1.2-c of the CONTRACT.

53.2 WITHDRAWAL FROM THE CONTRACT FOR CAUSE OF CONTRACTOR MATERIAL BREACH OF CONTRACT

53.2.1 Without limiting or excluding any of its other rights under the CONTRACT, the PURCHASER may, via a written Notice of Withdrawal delivered to the CONTRACTOR, withdraw from the CONTRACT for cause in the event of the following material breaches of CONTRACT by the CONTRACTOR:

- (a) In the event that, during the performance of the CONTRACT, the CONTRACTOR is liquidated, or that insolvency proceedings are brought against the CONTRACTOR in relation to actual or impending CONTRACTOR insolvency, or that the CONTRACTOR otherwise becomes insolvent; or
- (b) In the event that the PURCHASER (within its rights under the CONTRACT) refuses to

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approve the CONTRACTOR's DOCUMENTATION FOR EXECUTION OF THE PROJECT prepared pursuant to Section 2.5 of Supplement 3 to the CONTRACT, provided the three revisions (amendments) permitted to the CONTRACTOR under the CONTRACT have already been refused; or

- (c) In the event that the CONTRACTOR, in breach of Section 54 of the CONTRACT, assigns or transfers the CONTRACT or any part thereof, or any of its rights or obligations under the CONTRACT or interests in the CONTRACT, to another party; or
- (d) In the event that the total contractual penalties duly charged to the CONTRACTOR reach any of the limits specified in Sections 42.1.4, 42.2.18, and 42.4.5 of the CONTRACT, or that the completion of any of the part-payment milestones given in Supplement 10 to the CONTRACT is delayed by more than ninety (90) days; or
- (e) In the event that, for reasons attributable to the CONTRACTOR, the limit values of guaranteed parameters specified in Supplement 2 to the CONTRACT for the GUARANTEE MEASUREMENTS during Tests "A" and "B" remain unachieved despite required changes and modifications having been made by the CONTRACTOR pursuant to the CONTRACT; or
- (f) In the event that the CONTRACTOR has its own overdue financial obligations to any of its SUBCONTRACTORS on the WORK in excess of ten (10) per cent of any individual subcontract's value; or
- (g) In the event that, despite written notices from the PURCHASER to that effect, the CONTRACTOR is not proceeding with the WORK in accordance with the CONTRACT, or is repeatedly neglecting its obligations under the CONTRACT; or
- (h) In the event that the CONTRACTOR fails to submit to the PURCHASER bank guarantees on the terms specified in Section 16 of the CONTRACT; or
- (i) In the event that the CONTRACTOR fails to secure insurance pursuant to Section 49 of the CONTRACT; or
- (j) In the event of any breaches of CONTRACT originally deemed immaterial, if such breaches are not remedied during an additional, reasonable period provided by the PURCHASER for that purpose; or
- (k) In the event that *force majeure* conditions pursuant to Section 50 of the CONTRACT persist longer than 180 days.

PURCHASER withdrawal from the CONTRACT under this Section 53.2.1 of the CONTRACT is effective on the day of delivery of the Notice of Withdrawal to the CONTRACTOR, unless the Notice specifies a later date.

53.2.2 Upon receipt of a Notice of Withdrawal pursuant to Section 53.2.1 of the CONTRACT, the CONTRACTOR shall, either immediately or as of the date given in the Notice:

- (a) Cease all further WORKS, excepting any the PURCHASER may have specified in the Notice of Withdrawal for the sole purpose of protecting the already-completed portions of the WORK
- (b) Terminate all subcontracts, or, if requested by the PURCHASER, assign to the PURCHASER or to a third party (a replacement contractor) all subcontracts relating to the execution of the WORK that the PURCHASER may consider essential to the completion of the WORK
- (c) Within a mutually-agreed, technologically reasonable timeframe, remove from the SITE all CONSTRUCTION EQUIPMENT and recall all CONTRACTOR and SUBCONTRACTOR personnel, clear the SITE of all surplus materials, detritus, and waste of any kind, then return the SITE to the PURCHASER in a clean and safe

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- (d) Transfer to the PURCHASER all rights to completed parts of the WORK, particularly to any GOODS in place as of the date of withdrawal pursuant to Section 53.2.1 of the CONTRACT such as to which the CONTRACTOR may be obligated under other provisions of the CONTRACT to transfer rights to the PURCHASER
- (e) Submit to the PURCHASER all documentation created by the CONTRACTOR and its SUBCONTRACTORS in relation to the WORK as of the effective date of the Notice of Withdrawal pursuant to Section 53.2.1 of the CONTRACT such as the CONTRACTOR may be obligated under other provisions of the CONTRACT to submit to the PURCHASER for a WORK in progress.

53.2.3 In the event of PURCHASER withdrawal under Section 53.2 of the CONTRACT, the PURCHASER may access the SITE and bar the CONTRACTOR from further access. Furthermore, the PURCHASER may finish relevant works on its own or via a third party. The PURCHASER may seize and, in return for payment to the CONTRACTOR, use any CONSTRUCTION EQUIPMENT that may remain at the SITE to complete the WORK, for such a period as the PURCHASER may consider essential to complete the WORK; for the avoidance of doubt, failure to reach agreement on related payments does not affect the PURCHASER's right to use the CONSTRUCTION EQUIPMENT in this manner. Once the WORK has been completed, or earlier if the state of WORKS permits, the PURCHASER shall return the CONSTRUCTION EQUIPMENT to the CONTRACTOR, by means of notice to the CONTRACTOR to the effect that the CONSTRUCTION EQUIPMENT in question is available for pick-up at the SITE.

53.2.4 In the event of PURCHASER withdrawal from the CONTRACT under Section 53.2.1 of the CONTRACT, the PURCHASER shall pay to the CONTRACTOR:

- (a) The portion of the CONTRACT PRICE corresponding to duly completed parts of the WORK, including partially-complete parts in proportion to their degree of completion, as of the effective date of the Notice of Withdrawal; and
- (b) Fair-value compensation for any unused or partially-used GOODS that may remain at the SITE in relation to the WORK; and
- (c) All demonstrable and reasonable expenses that the CONTRACTOR may have incurred from WORKS pursuant to Section 53.2.2-a of the CONTRACT.

Any and all CONTRACTOR debts vis-à-vis the PURCHASER older than the withdrawal date shall be set off against CONTRACTOR claims under this Section. Once the CONTRACTOR has duly completed its activities pursuant to Section 53.2.2 of the CONTRACT, and once all other claims the PURCHASER and the CONTRACTOR may have on one another have been duly settled in accordance with the CONTRACT, the PURCHASER shall return to the CONTRACTOR the bank guarantees provided by the CONTRACTOR pursuant to the CONTRACT.

53.2.5 In the event of PURCHASER completion of the WORK pursuant to Section 53.2.3 of the CONTRACT, the costs of such PURCHASER works shall be calculated. If the sum of the CONTRACTOR's claim under Section 53.2.4 of the CONTRACT and demonstrated, reasonable expenses of the PURCHASER on completing the WORK exceeds the CONTRACT PRICE, the CONTRACTOR shall be liable to cover the shortfall. If the shortfall exceeds the CONTRACTOR's claim under Section 53.2.4 of the CONTRACT, the CONTRACTOR shall compensate the PURCHASER for the difference; if the shortfall is less than the CONTRACTOR's claim under Section 53.2.4 of the CONTRACT, the PURCHASER shall compensate the CONTRACTOR for the difference. The PURCHASER and the CONTRACTOR shall negotiate, in writing, the manner of calculation of the above, as well as the terms and means of payment.

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53.3 CONTRACTOR WITHDRAWAL FROM THE CONTRACT

53.3.1 Without limiting or excluding any of its other rights or means of redress under the CONTRACT, the CONTRACTOR may, via a written Notice of Withdrawal delivered to the PURCHASER, only withdraw from the CONTRACT for cause in the event of those material breaches of CONTRACT by the PURCHASER specified below. The Notice of Withdrawal pursuant to this Section 53.3.1 of the CONTRACT shall be effective upon delivery to the PURCHASER, unless a later date is given in the Notice. The CONTRACTOR may withdraw:

- (a) In the event that, during the performance of the CONTRACT, the PURCHASER is liquidated or bankruptcy proceedings are initiated against the PURCHASER; or
- (b) In the event that the PURCHASER fails to pay to the CONTRACTOR any amount due under the CONTRACT within three (3) months of the due date, despite having been notified in writing of its delay in payment and no fewer than fourteen (14) additional days have passed since the PURCHASER's receipt of such CONTRACTOR notice; or
- (c) In the event that *force majeure* conditions pursuant to Section 50 of the CONTRACT are impeding the execution of the WORK, and that the situation persists for more than three hundred sixty (360) DAYS.

The Parties hereby expressly declare that the CONTRACTOR may not withdraw from the CONTRACT for any reasons other than those explicitly stated in the CONTRACT. For the avoidance of doubt, the Parties have agreed to exclude from applicability to the CONTRACT the provisions of Sections 2002 through 2005 of the Czech Civil Code.

53.3.2 In the event of CONTRACTOR withdrawal under Section 53.3.1 of the CONTRACT, the CONTRACTOR shall, either immediately or at the date given in the Notice of Withdrawal, proceed in accordance with Section 53.1.2 of the CONTRACT.

53.3.3 In the event of CONTRACTOR withdrawal under Section 53.3.1 of the CONTRACT, the CONTRACTOR shall make all payments to the PURCHASER specified in Section 53.1.3 of the CONTRACT.

53.4 Any and all payments made by the PURCHASER to the CONTRACTOR under the CONTRACT, including any advance payments, may be set off against any and all amounts owed by the PURCHASER to the CONTRACTOR under this Section 53 of the CONTRACT.

53.5 Termination of the CONTRACT by withdrawal does not terminate (i) any PURCHASER claims to payment of contractual fines, reimbursement of damages and other costs and expenses, and other CONTRACTOR payments under the CONTRACT; (ii) any claims under warranty for the WORK or for hidden defects; (iii) the CONTRACT's provisions on confidentiality, applicable law, and dispute resolution; or (iv) any other rights and obligations under the CONTRACT obviously intended to survive termination.

53.6 In the event of withdrawal from the CONTRACT under this Section 53 of the CONTRACT, the PURCHASER shall, once both Parties' claims under the CONTRACT have been settled, return to the CONTRACTOR the CONTRACTOR's bank guarantees submitted pursuant to the CONTRACT.

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I. CONCLUDING PROVISIONS

54. ASSIGNMENT OF CONTRACT AND PROHIBITION OF RETENTION

- 54.1 The Parties have excluded the right of the CONTRACTOR to, without prior written permission of the PURCHASER, assign the CONTRACT or any part thereof, or any rights or obligations thereunder or any interests therein, to a third party. Likewise, the Parties have excluded the right of the CONTRACTOR to, without prior written permission of the PURCHASER, offer as collateral to a third party any rights or obligations under the CONTRACT or any interests therein.
- 54.2 The Parties have agreed that the CONTRACTOR shall not be entitled to retain, i.e., to exercise its right to retention of, any GOODS or future parts of the WORK under the CONTRACT, including any documentation.

55. ETHICAL CONDUCT BETWEEN THE PARTIES

- 55.1 Throughout the performance of the CONTRACT, the Parties agree to adhere to the highest ethical and anti-corruption standards.
- 55.2 To that end, the PURCHASER defines "Corrupt Behavior" to mean: The offer, promise, or giving, or the requesting or acceptance of, any undue advantages or benefits, as well as the giving or acceptance of remuneration, unreasonable gifts, acts of hospitality, or direct or indirect reimbursement for expenses to or from any person employed by or acting as a director of any private or public entity (including all persons making decisions on behalf of or acting in any capacity for any private or public entities or organizations), for the purpose of facilitating negotiations, receiving, retaining, or manipulating the course of business, or to gain any other advantage in the award and / or performance of the CONTRACT.
- 55.3 The CONTRACTOR shall ensure that itself and all entities controlled by it (defined as in Sections 74 through 77 of Act No. 90/2012, on Trading Corporations and Associations, as amended) adhere to these anti-corruption provisions.
- 55.4 The CONTRACTOR shall also request that its controlling entity, as defined in Sections 74 through 77 of Act No. 90/2012, on Trading Corporations and Associations, as amended, adhere to these provisions vis-à-vis the PURCHASER.
- 55.5 The PURCHASER reserves the right to terminate the CONTRACT in the event that it becomes aware that the CONTRACTOR, or an entity controlled by or controlling the CONTRACTOR, engaged in Corrupt Behavior in relation to the performance of the CONTRACT, directly or indirectly through a representative, and took no timely and adequate measures to remedy the situation.

56. FINAL PROVISIONS

- 56.1 This CONTRACT may only be amended by agreement of the Parties, in the form of numbered, written amendments executed pursuant to Section 222 of Act No. 134/2016, duly signed by the authorized signatories of both Parties, which shall then become an integral part of the CONTRACT. For an amendment to the CONTRACT to be valid, full consensus must be reached on its contents. Therefore, the Parties exclude the applicability of the provisions of Section 1726 (on *Lack of Consensus*) of the Czech Civil Code, whereby an amendment could otherwise be executed without full consensus.

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56.2 Validity and Effect

56.2.1 The CONTRACT shall become valid on the day of signing by both Parties.

56.2.2 The CONTRACT as a whole enters into effect on the day all of the following conditions are met (hereinafter, the "Effective Date"):

(a) A Resolution of Grant of Support is received from the Czech Ministry of the Environment (with approval from the Czech Ministry of Finance) in relation to such a grant from the EU Cohesion Fund under the Operational Programme Environment, Priority Axis 2, and / or on the day of the PURCHASER's issue of a unilateral written declaration pursuant to Section 56.2.3 of the CONTRACT;

(b) An enforceable Construction Permit is issued.

Based on available information, the PURCHASER expects the CONTRACT to enter into effect within 30 DAYS of signing.

56.2.3 The requirement of Section 56.2.2-a of the CONTRACT on the receipt of a Resolution of Grant of Support from the Czech Ministry of the Environment in relation to a grant from the EU Cohesion Fund under the Operational Programme Environment, Priority Axis 2 may be waived via a written statement of waiver by the PURCHASER.

56.2.4 Without regard for the above, the following provisions become effective upon CONTRACT signing: 1 [PARTIES TO THE CONTRACT], 2 [TERMS AND DEFINITIONS], 3 [LEGAL INTERPRETATION OF THE CONTRACT], 4 [CONTRACT DOCUMENTS], 5 [APPLICABLE LAW], 6 [RESOLUTION OF DISPUTES], 7 [NOTICES], 8 [PURPOSE OF THE WORK], Subsections 9.1 (a), (b), (c) in [SUBJECT OF THE CONTRACT – THE WORK], Subsections 10.1 (m), (n), (o), (p) in [WORK TIMETABLE], 11 [CONTRACTOR'S OBLIGATIONS IN EXECUTION OF THE WORK] to the extent that it applies to the WORKS and / or SERVICES to be performed before the Effective Date, 12 [PURCHASER'S COOPERATION] to the extent that it applies to the WORKS and / or SERVICES to be performed before the Effective Date, 15 [TAXES, CUSTOMS, AND FEES], 17 [LICENSES AND RIGHTS OF USE TO TECHNICAL INFORMATION], 18 [INFORMATION AND CONTRACT DOCUMENTS SECURITY], 19 [PARTIES' REPRESENTATIVES], Subsections 20.1 and 20.2, in [INFORMATION SUBMITTED TO PURCHASER], 21 [SUBCONTRACTING], 22 [STANDARDS AND LEGISLATION], 23 [ENGINEERING WORK, DOCUMENTATION], 24 [EXECUTION OF THE WORK] to the extent that it applies to the WORKS and / or SERVICES to be performed before the Effective Date, 38 [ADMINISTRATION RULES, OCCUPATIONAL HEALTH AND SAFETY], 42 [CONTRACTUAL PENALTIES], 43 [LIABILITY FOR DEFECTS, QUALITY GUARANTEE], 44 [REIMBURSEMENT FOR DAMAGES, LIMITATION OF LIABILITY], 45 [REIMBURSEMENT FOR PATENT CLAIMS], 46 [TRANSFER OF OWNERSHIP], 49 [INSURANCE], 50 [FORCE MAJEURE], 51 [CHANGE PROCEEDINGS], 52 [INTERRUPTION OF WORKS], 53 [WITHDRAWAL FROM THE CONTRACT], 54 [ASSIGNMENT OF CONTRACT AND PROHIBITION OF RETENTION], 55 [ETHICAL CONDUCT BETWEEN THE PARTIES], 56 [FINAL PROVISIONS].

56.3 With regard to the provisions of Section 56.2 of the CONTRACT, and in the interest of timely completion of the WORK pursuant to the CONTRACT, the Parties have agreed that the CONTRACTOR shall be allowed to perform, between CONTRACT signing and the Effective Date, those activities listed in Table 2 of Supplement 9 to the CONTRACT. In the event that the Effective Date does not occur within 30 DAYS of CONTRACT signing, or within some other longer period such as the Parties may agree to, the PURCHASER shall pay to the CONTRACTOR a portion of the CONTRACT PRICE corresponding to those of the activities listed in Table 2 of Supplement 9 to the CONTRACT that have been duly performed. Such a payment shall be made by the PURCHASER against a CONTRACTOR invoice for the amount accompanied by a PURCHASER-signed protocol documenting the PURCHASER's acceptance of the works in question, invoice due date to be forty-five (45) days from issue date. The payment of this Invoice shall represent the settlement of all claims, costs, expenses, and damages the CONTRACTOR may have thus far incurred in

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the performance of the CONTRACT.

- 56.4 In the event that the Effective Date of the CONTRACT does not occur within 30 DAYS of signing, but information available at the time indicates that the CONTRACT will enter into effect at a later date, then the PURCHASER shall call a meeting with the CONTRACTOR to discuss further procedure, particularly as regards the WORK timetable, and while maintaining compliance with Act No. 134/2016, on Public Procurement, as amended, and with the Public Tender Guidelines of the Operational Programme Environment 2014 – 2020. In the event that the Effective Date does not occur within 30 DAYS of CONTRACT signing, or within some other longer period such as the Parties may agree to, the PURCHASER may withdraw from the CONTRACT.
- 56.5 In the event that the CONTRACT becomes effective later than 30 DAYS after CONTRACT signing, as provided for in Section 56.4 of the CONTRACT, but the payment pursuant to Section 56.3 of the CONTRACT has already been made, then the Deposit and / or a relevant milestone payment as per Supplement 10 of the CONTRACT shall be lowered by the corresponding amount.
- 56.6 Unless incorporated into the CONTRACT, all agreements and understandings between the Parties, oral and written, prior to the CONTRACT and related to the subject of the CONTRACT, shall terminate upon the signing of the CONTRACT.
- 56.7 The Parties have agreed that the following shall survive the signing of the FINAL ACCEPTANCE Protocol for the WORK and / or the termination of the CONTRACT: (i) any PURCHASER claims to payment of contractual fines, reimbursement of damages and other costs and expenses, and other CONTRACTOR payments under the CONTRACT; (ii) any claims under warranty for the WORK or for hidden defects; (iii) the CONTRACT's provisions on confidentiality, applicable law, and dispute resolution; and (iv) any other rights and obligations under the CONTRACT obviously intended to survive FINAL ACCEPTANCE Protocol signing and / or termination.
- 56.8 In the event that any provision of the CONTRACT is found to be or to have become invalid, ineffective, and / or unenforceable, such a provision shall be considered separable from the remainder of the CONTRACT and, as such, shall not affect the validity, effectiveness, and / or enforceability of the CONTRACT as a whole. In such an event, the Parties shall replace the invalid, ineffective, and / or unenforceable provision with an alternative provision that is in line with the purpose of the CONTRACT and the will of the Parties as expressed in the CONTRACT.
- 56.9 The CONTRACTOR hereby assumes the risk of change of circumstances in the sense of Section 1765, Subs. 2 (on *Right to Resume Negotiations*) of the Czech Civil Code. Therefore, the provisions of Section 1765, Subs. 1 (on *Right to Resume Negotiations*) and Section 1766 (on *Restoration of Balance of Rights and Obligations by a Court*) of the Czech Civil Code shall be excluded from applicability to the CONTRACT. The CONTRACTOR hereby further assumes the risk of change of circumstances in the sense of Section 2620 (on *Absolute Amounts and References to Budget*) of the Czech Civil Code.
- 56.10 This CONTRACT is executed in four (4) identical counterparts in the Czech language, each of which shall have the legal force of an original. Upon signing, each Party shall receive two (2) counterparts.
- 56.11 The CONTRACT shall be binding in full upon any potential legal successors to either Party.
- 56.12 The CONTRACTOR hereby acknowledges that the PURCHASER, in the performance of the CONTRACT, needs to process, in a certain necessary scope, the personal data of CONTRACTOR personnel including its SUB-CONTRACTORS involved in the performance of the CONTRACT. The rights of such CONTRACTOR personnel in relation to the processing of their personal data by the PURCHASER are set forth in the Information Memorandum included in Supplement 13 to the CONTRACT. The CONTRACTOR shall make acquainted

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its personnel including its SUB-CONTRACTORS with this document.

- 56.13 The Parties declare to have familiarized themselves with the entirety of the CONTRACT, including all Supplements and to have no doubts as to the CONTRACT's interpretation, and declare the CONTRACT to be an expression of their free will; in attestation of this, the Parties adjoin their signatures.

In on

In on

For the PURCHASER:

For the CONTRACTOR:

.....
Ing. Milan Boháček
Deputy Chairman of the Board of Directors
United Energy, a.s.

.....

.....
Ing. Petr Mareš
Director
United Energy, a.s.

.....

LIST OF SUPPLEMENTS TO THE TERMS AND CONDITIONS (TO THE DRAFT CONTRACT FOR WORK)

1. PURCHASER's Technical Requirements on the WORK
2. Guaranteed Parameters
3. Documentation
4. Timetable and Execution Plan for the WORK
5. PURCHASER's Cooperation
6. Training
7. List of SUBCONTRACTORS
8. Bank Guarantees for the WORK and for the Deposit
9. Price Specification
10. Roadmap of Key WORK Milestones and Prices
11. Contractors' Code of Conduct
12. CONTRACTOR's Technical Specifications
13. Information on Processing of Personal Data obtained from Data Subject and from other Sources

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SUPPLEMENT 1

PURCHASER'S TECHNICAL REQUIREMENTS FOR THE WORK

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LIST OF ABBREVIATIONS

Abbreviations/ terms	Abbreviations used in PD-EL	Abbreviations used in PD-CL	Meaning in English	Meaning in Czech
A				
ABS	ABS	ABS	Absorber	Absorbér
AI	AI	AI	Analog Input	Analogový vstup
AO	AO	AO	Analog Output	Analogový výstup
ASŘTP	ASŘTP	ASŘTP	Automated technological process control system	Automatizovaný systém řízení technologického procesu
B				
BAT	BAT	BAT	Best Available Techniques	Nejlepší dostupná technika
BO	BO	BO	Ordinary repair	Běžná oprava
BOZP	OHS	BOZP	Occupational Health and Safety	Bezpečnost a ochrana zdraví při práci
C				
CO	CO	CO	Carbon monoxide	Oxid uhelnatý
CO ₂	CO ₂	CO ₂	Carbon dioxide	Oxid uhličitý
CPU	CPU	CPU	Central Processing Unit	Procesorová jednotka
Č				
ČR	ČR	ČR	Czech Republic	Česká republika
ČÚBP	ČÚBP	ČÚBP	Czech Occupational Safety Office	Český úřad bezpečnosti práce
ČSN	ČSN	ČSN	Czech technical standard	Česká technická norma
D				
DCS	DCS	DCS	Distributed Control System	Distribuovaný řídicí systém
DN	DN	DN	Diameter Nominal	Jmenovitý průměr
DPS	DPS	DPS	Partial process system	Dílčí provozní soubor
DSP	DSP	DSP	Building Permit Documentation	Dokumentace pro stavební povolení
DUR	DUR	DUR	Construction Location Documentation	Dokumentace pro vydání rozhodnutí o umístění stavby a nebo zařízení
E				
EN	EN	EN	European standard	Evropská norma
ENGs	ENGs	ENGs	Energogypsum	Energosádrovec

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EPS	EPS	EPS	Electrical fire alarm system	Elektrická požární signalizace
F				
FAT	FAT	FAT	Factory Acceptance Test	Zkoušky u ZHOTOVITELE
FM	FM	FM	Frequency convertor	Frekvenční měnič
G				
GO	GO	GO	Overhaul	Generální oprava
GP	GP	GP	Guaranteed parameters	Garantované parametry
GPS	GPS	GPS	Global Positioning System	Systém mobilní navigace
H				
Hg	Hg	Hg	Mercury	Rtuť
HMI	HMI	HMI	Human Machine Interface	Rozhraní člověk – stroj
HUP	HUP	HUP	Main gas shut-off valve	Hlavní uzávěr plynu
HVB	HVB	HVB	Main production unit	Hlavní výrobní blok
HW	HW	HW	Hardware	Hardware (fyzicky existující technické vybavení)
I				
IO	IO	IO	Utility system	Inženýrský objekt
ITI	ITI	ITI	Technical Inspection Institute	Institut Technické inspekce
IZ	IZ	IZ	Individual tests	Individuální zkoušky
K				
KKS	KKS	KKS	Kraftwerk- Kennzeichensystem – Power Plant and Energy Coding System	Kraftwerk- Kennzeichensystem - Elektrárenský a energetický kódovací systém
k.ú.	k.ú.	k.ú.	Cadastral area	Katastrální území
KY II	KY II	KY II	Komořany Heating plant II	Teplárna Komořany II
L				
LF	LF	LF	Fabric filter	Látkový filtr
LM	LM	LM	Bedding material	Ložový materiál
N				
NB	NB	NB	Connecting point / Terminal point	Napojovací bod / přípojně místo
nn	nn	nn	Low Voltage	Nízké napětí

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NO _x	NO _x	NO _x	Oxides of nitrogen	Oxidy dusíku
NTP	NTP	NTP	Network Time Protocol	Protokol pro synchronizaci času v počítačové síti
NV	NV	NV	Government Regulation	Nařízení vlády
O				
O ₂	O ₂	O ₂	Oxygen	Kyslík
OIP	OIP	OIP	Regional Labour Inspectorate	Oblastní inspektorát práce
OK	OK	OK	Steel structures	Ocelové konstrukce
OS	OS	OS	Operator station	Operátorská stanice
P				
PC	PC	PC	Personal computer	Osobní počítač
PBŘ	PBŘ	PBŘ	Fire-safety solution	Požárně bezpečnostní řešení
PE	PE	PE	Protective conductor; possibly polyethylene	Ochranný vodič eventuálně polyetylen
PKZ	PKZ	PKZ	Inspection and Test Plan	Plán kontrol a zkoušek
PLC	PLC	PLC	Programmable Logic Controller	Programovatelný automat pro řízení technologických procesů
PM	PM	PM	Terminal point / Connecting point	Přípojný místo / napojovací bod
PN	PN	PN	Pressure Nominal	Jmenovitý tlak
PO	PO	PO	Fire protection	Požární ochrana
PP	PP	PP	Polypropylene	Polypropylen
PS	PS	PS	Process system	Provozní soubor
PTD	PTD	PTD	Operation and Technical Documentation	Průvodní technická dokumentace
PTN	PTN	PTN	Instrumentation voltage transformer	Přístrojový transformátor napětí
PTP	PTP	PTP	Instrumentation current transformer	Přístrojový transformátor proudu
PVC	PVC	PVC	Polyvinylchloride	Polyvinylchlorid
R				
R	R	R	Reference state at 6% O ₂ , 101,325 Pa, 0 °C	Referenční stav při 6% O ₂ , 101,325 Pa, 0 °C
Ř				

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Abbreviations/ terms	Abbreviations used in PD-EL	Abbreviations used in PD-CL	Meaning in English	Meaning in Czech
ŘS	ŘS	ŘS	Control system	Řídicí systém
S				
SI	SI	SI	International System of Units	Mezinárodní soustava jednotek fyzikálních veličin
S-JTSK		S-JTSK	System of the Uniform Trigonometric Cadastral Network	Systém jednotné trigonometrické sítě katastrální
SKŘ	SKŘ	SKŘ	Instrumentation and Control System	Systém kontroly a řízení
SNTP	SNTP	SNTP	Simple Network Time Protocol	Jednoduchý protokol pro synchronizaci času v počítačové síti
SO	SO	SO	Building structure	Stavební objekt
SO ₂	SO ₂	SO ₂	Sulfur dioxide	Oxid siřičitý
SO ₃	SO ₃	SO ₃	Sulfur trioxide	Oxid sírový
SW	SW	SW	Software	Software (programové vybavení)
T				
TKY	TKY	TKY	Komořany Heating Plant	Teplárna Komořany
TP	TP	TP	Technical regulation	Technický předpis
TZB	TZB	TZB	Technical equipment of buildings	Technická zařízení budov
TZL	TZL	TZL	Total particulate matter	Tuhé znečišťující látky
U				
UE	UE	UE	United Energy	United Energy
UPS	UPS	UPS	Uninterruptible Power Supply	Nepřerušitelný zdroj energie
V				
vn	vn	vn	High Voltage	Vysoké napětí
VZT	(HVAC)	VZT	Heating, ventilation and air conditioning	Vzduchotechnika
Z				
ZD	ZD	ZD	Tender documentation	Zadávací dokumentace
ZS	ZS	ZS	Site facilities	Zařízení staveniště

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1. GENERAL PROJECT DESCRIPTION

1.1 INTRODUCTION

The construction project named "Environmental Improvement of Source TKY II - Wet Desulfurization" (hereinafter "Desulfurization") includes the construction of wet desulfurization technology for boilers K6 - K10 to ensure compliance with the new emission limits in accordance with the requirements of this CONTRACT and with the conditions laid down in the Air Protection Act No. 201/2012 Coll. and the subsequent Decree No. 415/2012 Coll. of the Ministry of the Environment, which sets emission limits and other conditions for the operation of stationary sources of air pollution.

The construction shall be carried out on UE land adjacent to the main production block.

The implementing of the construction represents an above-limit public procurement contract for construction work, pursuant to Act No. 134/2016 Coll., on public procurement, as amended, and is within the scope and under the conditions described in detail in the CONTRACT and its appendixes subject of the CONTRACTOR'S WORK.

The WORK shall be supplied in the form of turn-key deliveries.

1.2 CONSTRUCTION PROJECT INFORMATION

Developer/PURCHASER: United Energy, a.s.
Registered office at: Most, Komořany, Teplárenská 2, PSČ 434 01
IČ/ID No: 273 09 959
DIČ/Tax registration No: CZ-273 09 959
Construction project name: Environmental Improvements on Source TKY II - Wet Desulfurization
Project characteristics: New, permanent construction
Location of construction: Czech Republic, Ústí Region, City of Most
Cadastral area: Cadastral area Komořany u Mostu

1.3 CONSTRUCTION PROJECT MANAGEMENT

1.3.1 ROLE OF PURCHASER'S ORGANIZATION

The PURCHASER'S organization's role during the construction phase is mainly to:

- Ensure investor's obligations with respect to the state administration bodies and provide other support for the project implementation requiring cooperation of third parties (operators or owners of utilities etc.), including ensuring the implementation of follow-up projects that are not within the scope of WORK.
- Assuring conformance with obligations and exercising the rights of the PURCHASER arising from the CONTRACT with the CONTRACTOR.
- Coordination of the construction project with follow-up projects and third party activities.

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In order to ensure the investor's functions in the preparation and implementation of the project, the PURCHASER has appointed a project team that shall be a partner of the CONTRACTOR'S project team during the implementation of the WORK.

In support of some of the project team's tasks, the PURCHASER uses/shall use the services of selected external engineering and consulting organizations.

Because of the utilization of external organizations for activities related to the WORK, the PURCHASER reserves the right to provide these organizations with the documentation and other information obtained from the CONTRACTOR necessary to monitor the activities of the CONTRACTOR and to support other PURCHASER'S activities, provided that these external organizations shall be bound by the PURCHASER to protect confidential information to the same extent as the PURCHASER is bound itself.

The PURCHASER concurrently reserves the right to provide under the same conditions the relevant documentation and other information obtained from the CONTRACTOR to the contractors selected for the implementation of projects following up the WORK, to the extent necessary for the coordination of the WORK and of these follow-up projects.

All PURCHASER'S relationships to external entities are direct. This means that none of the organizations involved in the preparation and implementation of the construction project is authorized by the PURCHASER to represent its interests vis-à-vis other construction project participants or the state authorities and institutions on its behalf, or to provide any third party with any documentation and information it processes for the PURCHASER or receives in connection with the construction project.

1.3.2 CONTRACTOR'S MANAGEMENT AND COORDINATION ROLE

Considering that the WORK shall be supplied on turnkey basis, the management of the WORK implementation within the set boundaries of the WORK is the sole responsibility of the CONTRACTOR, including mutual coordination of the CONTRACTOR'S own activities and the activities of all its SUB-CONTRACTORS.

The CONTRACTOR shall furthermore provide to the PURCHASER cooperation and support needed to coordinate the WORK with the other follow-up projects, to achieve compatibility of the WORK and the follow-up projects and to harmonize their design preparation, implementation and commissioning.

These services shall include in particular:

- necessary additional information or updating of the WORK documentation necessary for the coordination of the WORK and the follow-up projects;
- cooperation in resolving potential conflicts between the WORK and the follow-up projects;
- participation of CONTRACTOR'S REPRESENTATIVES at consultations and coordination meetings convened by the PURCHASER.

1.3.3 ORGANIZATIONAL INTERFACE AND PROCEDURES FOR COMMUNICATION BETWEEN THE PURCHASER AND THE CONTRACTOR

The organizational interface and documentation management procedures, including the rules for mutual communication between the PURCHASER and the CONTRACTOR shall be provided in the Project Administrative Code, to be processed by the CONTRACTOR in accordance with the requirements of the CONTRACT – for details see Chapter. 2.1, Supplement 3 to the CONTRACT.

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1.4 PROJECT LOCATION

1.4.1 GEOGRAPHIC LOCATION

The WORK shall be implemented in the Ústí nad Labem Region, District of Most, in the cadastral area of Třebušice and Komořany. The area is a part of the town of Most.

1.4.2 CONSTRUCTION SITE LOCATION

The construction site is located on land plot:

Cadastral area Komořany u Mostu, land plot no. 668893

The land plot is located within the premises of United Energy, a.s.

The location of the CONSTRUCTION SITE is shown in Amendment D01.

1.4.3 INFRASTRUCTURE, UTILITIES AND TRANSPORTATION ROADS

The location and layout of all existing infrastructure is shown in Amendment D01 and in the general layout in Amendment D03. The most important utilities passing by or through the future CONSTRUCTION SITE are listed below.

UTILITIES

The following utilities pass through the CONSTRUCTION SITE:

- storm water sewer,
- sanitary water sewer,
- drinking water supply system,
- industrial water supply system,
- fire water distribution system,
- steam pipeline,
- hot water pipeline,
- medium pressure gas line,
- high and low voltage power lines,
- computer network, telecommunications, internet (internal WiFi network).

ACCESS FOR TRANSPORTATION

Road Transportation

The CONSTRUCTION SITE is accessible from the local road Teplárenská.

Railroad siding

It is located southwest of the CONSTRUCTION SITE. The siding is connected to the track 130 Ústí nad Labem - Chomutov.

The use of rail transport is possible after consultation with the relevant stakeholders. The CONTRACTOR has the possibility to use this mode of transportation.

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1.4.4 GEOLOGICAL, GEOMORPHOLOGICAL AND HYDROGEOLOGICAL CONDITIONS

In the area of the future CONSTRUCTION SITE, the following surveys have been carried out:

- Mining expert's opinion statement from 05/2008, prepared by Ing. Svatopluk Havlík, under serial number 289 of the expert's journal.
- Engineering geology survey from 05/2008, prepared by RNDr. Peter Horváth

The conclusions from the surveys are provided in Amendment D01, the complete documentation can be requested from the PURCHASER, in Czech language, if required.

1.4.5 RADON RISK

Regarding risk of radon penetrating from the subsoil, the CONSTRUCTION SITE is located in the medium radon index area.

1.4.6 PROTECTED ZONES AND AREAS

The CONSTRUCTION SITE is located outside protected areas of natural water accumulation or their protection zones. The Krušné hory protected area of natural groundwater accumulation is located approximately 6.5 km to the northeast.

There is no specially protected area or its protection zone in the immediate vicinity of the CONSTRUCTION SITE. The nearest protected area according to the Act No. 114/1992 Coll. is the National Nature Reserve Jezerka, situated about 6.5 km to the NW and the Protected Landscape Area of České středohoří, the border of which passes about 10 km southeast of the CONSTRUCTION SITE.

The CONSTRUCTION SITE is located outside of sanitary water protection zones.

The CONSTRUCTION SITE is located outside of historical monument conservation zones and also outside the protection zones.

There are no cultural monuments on the CONSTRUCTION SITE.

The CONSTRUCTION SITE is not located in a mining area and is not, pursuant to the provisions of Section 43, considered to be a protected deposit area under the provisions of the Mining Act.

The CONSTRUCTION SITE is located outside of the forest protection zone (50 m), pursuant to Section 14 of Act No. 289/1995 Coll. as amended (The Forest Act, amending and supplementing certain acts).

The CONSTRUCTION SITE neighbors on the protection zones of these roads and utilities:

- Railroad line - protection zone of the railroad line Most - Chomutov and the railroad line of SEVEN, a.s. coal cleaning plant - pursuant to Act No. 266/1994 Coll. - 60 m from the outer track axis, but at least 30 m from the perimeter of the track.
- 110 kV power line - according to Act No. 458/2000 Coll. - 12 m from the outer conductor.
- HVB protection zone - 20 m

1.4.7 LOCATION RELATIVE TO FLOOD ZONES

The CONSTRUCTION SITE does not require any special measures.

1.4.8 SEISMIC CONDITIONS

The CONSTRUCTION SITE belongs to areas with very **low seismic activity**.

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The seismic activity in the vicinity of the CONSTRUCTION SITE is according to ČSN EN 1998-1 in a zone with an intensity of less than 6° M.C.S. (modified Mercalli-Cancani-Sieberg scale).

There is **no need to consider the effect of earthquakes** in this area and there are no special for the equipment supplied.

1.4.9 CLIMATIC CONDITIONS

The CONSTRUCTION SITE is located in the T2 climate zone, which is characterized by a long, warm and dry summer and short, slightly warm and very dry winter. The mesoclimate of the area may be partly influenced by the anthropogenic transformation of the relief. Regarding long-term average, the air temperature value in the Most area (the proximity of Most) is above average. On the contrary, the long-term precipitation total is below the average of the Czech Republic - the area southwest of Most belongs to the driest regions of the Czech Republic due to the Krušné Mountains elevation blocking the precipitation. Due to the prevailing western air flow over Central Europe, winds with western direction component also predominate in the Most area - because of the position in an elongated depression, the southwestern winds are the most common, and e.g. in contrast with the Krušné Mountains, wind direction from east to northeast is also important. The windless period is around the average value for the Krušné Mountains foothills, i.e. about 15%.

Nominal winter temperature	-12 v (windy area)
Characteristic snow weight value	0.7 kN/m ² 1 – area according to ČSN EN 1991-1-3 ed.2
Average annual air temperature:	8 - 9 °C
Number of freezing days in a year:	100 - 120
Number of summer days in a year:	40 - 60
Average annual total precipitation:	450 - 650 mm
Number of days with precipitation of more than 1 mm:	80 - 90
Number of days with snow cover in a year:	20 - 50
Maximum snow cover:	20 - 40 cm
Precipitation total in summer period:	200 - 300 mm
Precipitation total in winter period:	250 - 350 mm
Cloud cover, annual:	60 – 75 %
Sun shine:	1600 h/year
Dominant wind direction:	SW, W, NW
Daily extremes (Meteorological station Ústí nad Labem):	

Maximum temperature:	36.5 °C	August 13,2003
Minimum temperature:	-22.1°C	January 9,1985
Precipitation:	59.7 mm	August 12, 2002
Maximum wind burst:	from direction 280° - 44.1 m.s ⁻¹	January 19, 2007

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1.4.10 DESIGN LIMITATIONS RESULTING FROM CONSTRUCTION SITE LOCATION

The technical design of the WORK and the way it is implemented must respect all restrictions imposed by the location of the WORK within the premises of the operating UE heating plant, in particular the limitations resulting from:

- Layout restrictions arising from the location and configuration of the existing buildings and heating plant premises and existing utilities within the UE area.
- Existing configuration of connected technologies (including electrical, CCTV and other low-voltage distribution systems such as fire alarm, telephone lines, camera systems, etc.).
- Existing protection zones.
- Existing geological, geomorphological, hydrogeological, climatic and seismic conditions at the WORK site.
- Existing or planned communications and access routes.
- The necessity of implementing the WORK without limiting the operation of the UE heating plant beyond the specified times for connecting the WORK to existing technologies. Therefore, there must be no situations where the operator is forced to shut down equipment or reduce production due to improper activities of the CONTRACTOR.
- From safety-related rules arising from applicable standards and regulations, and the relevant governing guidelines of the operator, in particular the Guideline No. SM-UE-1805 "Contractors' Code of Conduct" (see Supplement 11 of the CONTRACT).
- Conditions of the building permit being developed.
- Other conditions that exist at the site of the WORK.

More detailed information on the initial and limiting conditions at the place of installation, dimensional, time, capacity, organizational, legislative and technical restrictions are provided further in this Supplement 1 to the CONTRACT and in its Amendment D01.

1.5 BASIC INFORMATION ON EXISTING EQUIPMENT

1.5.1 BOILER ROOM KY II

The boiler room KY II is fitted with 5 fluid boilers. These are drum boilers with a natural circulation of steam-water mixture in boiler tubes and membrane walls forming the walls of the furnace boosted by circulating pumps in the bottom fluidized bed evaporators.

Boilers KY II have a membrane wall, their nominal steam output is 140 t/h and the overload capacity is 154 t/h, the nominal steam temperature is 490 °C and the pressure is 7.5 MPa.

Boilers KY II have the same stationary bubble fluid furnace; it is a transitory type of a stationary furnace with circulating fluidized bed (cirkofluid).

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Flue gas parameters on boiler room output:

Maximum operational boiler room state:

Parameters guaranteed by the PURCHASER:

Description	Unit	Value
Q wet flue gas	Nm ³ /h	800,000
Moisture content	%	14.1
O ₂ wet flue gas	%	5.15
SO ₂	mg/Nm ³ R	4,291
SO ₂	kg/h	2,949
HCl	mg/Nm ³ R	50
HF	mg/Nm ³ R	25
TZL before fabric filter	g/Nm ³ R	139
Flue gas temperature before fabric filter	°C	135

Indicative parameters:

Popis	Jednotka	Hodnota
O ₂ dry flue gas	%	6
NO _x	mg/Nm ³ R	180
SO ₃	mg/Nm ³ R	200
Hg	mg/Nm ³ R	0.0070
Average ash production (fabric filter + bedding material)	t/h	52.01
Vacuum close to transfer point before fabric filter	kPa (g)	-1.12
Pressure(+)/Vacuum(-) at location of TZL measurement	kPa (g)	-0.26
Q dry flue gas (6% O ₂ , 101,325 Pa, 0°C)	Nm ³ /h R	687,415

Operational state boiler room 1:

Parameters guaranteed by the PURCHASER:

Description	Unit	Value
Q wet flue gas	Nm ³ /h	593,416
Moisture content	%	14.4
O ₂ wet flue gas	%	3.85
SO ₂	mg/Nm ³ R	3,206
SO ₂	kg/h	1,792
HCl	mg/Nm ³ R	10
HF	mg/Nm ³ R	5
TZL before fabric filter	g/Nm ³ R	139
Flue gas temperature before fabric filter	°C	136

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Indicative parameters:

Description	Unit	Value
O ₂ dry flue gas	%	4.5
NO _x	mg/Nm ³ R	180
SO ₃	mg/Nm ³ R	120
Hg	mg/Nm ³ R	0.0047
Average ash production (fabric filter + bedding material)	t/h	30.7
Vacuum close to transfer point before fabric filter	kPa (g)	-0.84
Pressure(+)/Vacuum(-) at location of TZL measurement	kPa (g)	-0.26
Q dry flue gas (6% O ₂ , 101,325 Pa, 0°C)	Nm ³ /h	558,930

Operational state boiler room 2:

Parameters guaranteed by the PURCHASER:

Description	Unit	Value
Q wet flue gas	Nm ³ /h	421,550
Moisture content	%	14.0
O ₂ wet flue gas	%	4.30
SO ₂	mg/Nm ³ R	3,206
SO ₂	kg/h	1,240
HCl	mg/Nm ³ R	10
HF	mg/Nm ³ R	5
TZL before fabric filter	g/Nm ³ R	139
Flue gas temperature before fabric filter	°C	136

Indicative parameters:

Description	Unit	Value
O ₂ dry flue gas	%	5.0
NO _x	mg/Nm ³ R	180
SO ₃	mg/Nm ³ R	120
Hg	mg/Nm ³ R	0.0047
Average ash production (fabric filter + bedding material)	t/h	21.3
Vacuum close to transfer point before fabric filter	kPa (g)	-0.74
Pressure(+)/Vacuum(-) at location of TZL measurement	kPa (g)	-0.26
Q dry flue gas (6% O ₂ , 101,325 Pa, 0°C)	Nm ³ /h	386,783

Operational state boiler room 3:

Parameters guaranteed by the PURCHASER:

Description	Unit	Value
Q wet flue gas	Nm ³ /h	203,916

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Description	Unit	Value
Moisture content	%	13.3
O ₂ wet flue gas	%	5.20
SO ₂	mg/Nm ³ R	3,206
SO ₂	kg/h	567
HCl	mg/Nm ³ R	10
HF	mg/Nm ³ R	5
TZL before fabric filter	g/Nm ³ R	138
Flue gas temperature before fabric filter	°C	139

Indicative parameters:

Description	Unit	Value
O ₂ dry flue gas	%	6.0
NO _x	mg/Nm ³ R	180
SO ₃	mg/Nm ³ R	120
Hg	mg/Nm ³ R	0.0047
Average ash production (fabric filter + bedding material)	t/h	9.7
Vacuum close to transfer point before fabric filter	kPa (g)	-0.50
Pressure(+)/Vacuum(-) at location of TZL measurement	kPa (g)	-0.26
Q dry flue gas (6% O ₂ , 101,325 Pa, 0°C)	Nm ³ /h	176,795

Operational state boiler room 4:

Parameters guaranteed by the PURCHASER:

Description	Unit	Value
Q wet flue gas	Nm ³ /h	600,000
Moisture content	%	14.4
O ₂ wet flue gas	%	4.71
SO ₂	mg/Nm ³ R	6,801
SO ₂	kg/h	3,610
HCl	mg/Nm ³ R	20
HF	mg/Nm ³ R	40
TZL before fabric filter	g/Nm ³ R	137
Flue gas temperature before fabric filter	°C	136

Indicative parameters:

Description	Unit	Value
O ₂ dry flue gas	%	5.5
NO _x	mg/Nm ³ R	185
SO ₃	mg/Nm ³ R	200
Hg	mg/Nm ³ R	0.0047
Average ash production (fabric filter + bedding material)	t/h	35.6

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Description	Unit	Value
Vacuum close to transfer point before fabric filter	kPa (g)	-0.84
Pressure(+)/Vacuum(-) at location of TZL measurement	kPa (g)	-0.26
Q dry flue gas (6% O ₂ , 101,325 Pa, 0°C)	Nm ³ /h	530,157

Medium term operating range – parameters guaranteed by the PURCHASER:

Description	Unit	Min. Value	Max. Value
Q wet flue gas	Nm ³ /h	120,000	800,000
Moisture content	%	12	16
O ₂ dry flue gas	%	3	9
O ₂ wet flue gas	%	2.64	7.56
SO ₂	mg/Nm ³ R		10,300
SO ₂	kg/h		3,610
HCl	mg/Nm ³ R		50
HF	mg/Nm ³ R		90
NO _x	mg/Nm ³ R	165	200
SO ₃	mg/Nm ³ R	50	200
Hg	mg/Nm ³ R		0.0100
TZL before fabric filter	g/Nm ³ R		250
Flue gas temperature before fabric filter	°C	125	180
Average ash production (fabric filter + bedding material)	t/h	6	62.9
Fabric filter difference (intake SV – entry to fabric filter)	kPa (g)		-2.35
Pressure (+)/Vacuum (-) after KV	kPa (g)	-0.65	0.3
Pressure(+)/Vacuum(-) at location of TZL measurement	kPa (g)	-0.6	0.25
Vacuum close to transfer point before fabric filter	kPa (g)	-0.30	-1.40

Note: The values in the columns "Min. Value" and "Max. Value" mean the variance of the values of the single parameters regardless of the particular operating mode.

1.5.2 FABRIC FILTER

Flue gas from the K6-K10 boilers is fed through a fabric filter, flue gas fan, and flue gas ducts into the stack. The fly ash from the fabric filter is re-injected into the fluidized bed via fly ash intermediate storage or fed as the bedding material from the boiler to the agglomeration silos.

Two four-chamber fabric filters with 4 bypass plate valves (4 pcs), type 2x (4)RP-18-225-D6 are installed on each boiler.

Hose cleaning (regeneration) is carried out by compressed air with a pressure of 0.6 ÷ 0.8 MPa from the instrument air distribution system (see Chapter 1.8.6.1).

Technical parameters – data provided for 2 filters (8 chambers total):

Filter type		2x(4)RP-18-225-D6	
Total filter area		4,734	m ²
Number of filter hoses		1,800	ks

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Filter weight		166,500	kg
Filter hose	Dimension	D6-18	
	Material	materials based on PPS	
Support baskets	Dimension	D6-18/16/AKV	
	Material	17 246	
Venturi tube	Dimension	D6	
	Material	11 321	
Membrane valves	Type	RCA 45T2 – Buna N	
	Number	120	ks
Solenoid valves	Type	RCA 3D2T	
	Number	120	ks

Performance parameters:

Flue gas flow	Designed	172,300	Nm ³ /h
Gas temperature	Operational	132-160	°C
	Maximum	180	°C
Vacuum in filter	Maximum	5	kPa
Pressure in filter	Maximum	5	kPa
Input TZL concentration	Maximum	250	g/Nm ³
Output TZL concentration	Guaranteed	25	mg/Nm ³
Air pressure	Maximum	0.8	MPa
	Minimum	0.6	MPa

When reaching 180 °C, the LF is shut down and the flue gas passes through the so-called By Pass (T> 180 °C). At this time, the higher flue gas temperature with a maximum of 200 °C is reached.

Additional information is provided in Amendment D04.

1.5.3 LIMESTONE SILOS

The limestone silo (ZS) is a cylindrical vessel made from sheet steel with a designed thickness of 10 mm with a slightly conical metal sheet bottom with a designed thickness of 12 mm and an even flat ceiling. The silos are built on 8 supporting pillars anchored in a concrete foundation blocks. The body of the silo is reinforced on the outer surface by steel sections.

Inside, at the level of +9.5 m, a sedimentation chamber is installed to pre-capture dust from the conveying air. In the center of the bottom of the silo is a discharge hole above which a metal sheet cone is installed to protect the discharge hole against limestone impact and congestion of the outlet opening into the transport container. At the bottom of the silo there is also aeration in the form of aerating troughs. At the outlet of the silo, sampling points for taking limestone samples are installed.

On the silo ceiling 2 safety valves are installed, set at pressure of 30 kPa and vacuum of 30 kPa, bottom entry hatch, dust removal equipment, level measuring probe, 2 limestone inputs into silos

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and 1 vacuum inlet for the transport container under the limestone silo. Silos No. 1 - 2, 3 - 4 are connected by a duct for duplicate dust removal.

The total number of silos in limestone management is 4. Two limestone unloading stations are installed for each silo - for details, see Chapter Tank unloading station.

Technical parameters:

Parameter	Unit	Value
Effective capacity	t	1,260
Effective volume	m ³	900
Total volume	m ³	1,000
Internal diameter	m	9
Cylinder height	m	16
Total height without dust removal equipment	m	21
Maximum pressure	Pa	25,000,000

1.5.4 LIMESTONE HANDLING SYSTEM – TANK UNLOADING STATION

Each silo has 2 tank unloading stations located on its sides. Each station consists of:

- filling pipe line with DN100 terminal with a manual shut-off valve (each filling line feeds only the respective silo)
- compressed conveying air duct fitted with a pressure regulator with DN80 terminal with a manual and pneumatic shut-off valve.

Tank and silo interconnection is carried out using reinforced hoses - limestone unloading hoses and air hoses for driving the compressed air. After the connection, air is fed into the tank by the air hose, which pushes the limestone from the tank through the unloading hose and the filling line into the silo.

The emptying of the tanks is controlled by the limestone system operator. The hose connection, including the conveying compressed air hose, is carried out by the tank truck driver.

1.5.5 AGGLOMERATION – FLY ASH SILO

Two fly ash silos are a part of the agglomeration technology. The agglomeration silo is a cylindrical vessel mounted in a special steel structure. The lower bottom of the silo is at a height of 26 m, the top lid at a height of 40 m.

The lower bottom of the silo with installed aeration troughs slopes slightly to the center. A protective metal sheet cone is installed above the drain hole. The lower part of the silo is thermally insulated.

On the upper lid of the silo, outside the ash inlet cabinets, the outlets of ducts venting the inner protective cone and the stabilize mixer are installed.

Technical parameters:

Parameter	Unit	Value
Number	pcs	2
Silo diameter	m	9
Silo height	m	14
Total volume	m ³	900
Effective volume	m ³	750

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1.5.6 AGGLOMERATION – STABILIZATE PRODUCTION

The production of stabilizate takes place in a device called a mixer. The mixer is a cylindrical vessel in which blades are installed on a shaft for mixing and discharging the stabilizate. The mixer is continuously mixing the ash with water to the initial reaction to produce the stabilizate.

Technical parameters:

Parameter	Unit	Value
Type	-	HTK 6100
Volume	l	6,620
Output	m ³ /hr	85 – 230
Engine rating	kW	250
Voltage	kV	6
Nominal current	A	31.6
Hydrodynamic coupling - type	-	H2 SH 10A
- revolutions	min ⁻¹	1,445/81.44
- oil volume	l	45

The fly ash for mixer is removed from the agglomeration silo by a drain hole in the center of the bottom of the silo. A manual closing flap is installed here, and under it a pneumatic flap controlled automatically during the operation of the mixer. Behind the pneumatic flap, the ash passes through the control valve through the fluidized trough into a Schenk balance and is passed to the mixer after flow rate measurement. The dry ash flow rate of ranges from 40 to 150 tons per hour and maximum up to 200 tons per hour.

Ash delivery set-up is as follows:

- from silo No. 1 to mixer No. 1,
- from silo No. 1 to mixer No. 3,
- from silo No. 2 to mixer No. 2,
- from silo No. 2 to mixer No. 3.

The main source of water for wetting the stabilizate in mixers is the technology process "Delivering saline waste water to ash agglomeration". The technology consists of a saline water accumulation sump consisting of seven interconnected chambers with a usable capacity of 220 m³.

Saline water from different technologies and raw water is supplied to the accumulation sump.

A pump station with Grundfos pumps is installed at the outlet of the accumulation sump. Water conductivity is measured at the pumping station intake, which is the outlet from the accumulation sump. The pumping station delivers mixing water from the saline accumulation sump to the ash agglomeration process by a delivery pipeline which is connected upstream of the closing fittings into the pump delivery pipes for backup water supply.

The pumping station has the capacity to supply two lines of ash agglomeration at the same time. The required water pressure for ash agglomeration is about 0.5 to 0.7 MPa. The maximum volume flow rate of the pumping station is 200 to 300 m³/hr. The total water demand to ensure the functionality of the ash agglomeration is about 600 to 1020 m³ per day.

Each mixer is supplied separately via an output manual valve, a regulating pneumatic valve, and has a sensor for water flow into the mixer. After the mixer is started, the water dosing to achieve the desired moisture content is performed automatically, depending on the ash flow rate. Three

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moisture content readings are displayed on the control panel. The operator can regulate it within $\pm 5\%$ of the specified moisture content, based on own quality assessment of the stabilize produced.

Wetting is performed automatically to an average moisture content of 36.7% with respect to the current quality parameters of fly ash in the silos.

The main volume of stabilize transport from the site is carried out by an external road transportation company. The agglomeration is operated in a campaign-like manner. The production and shipment of stabilize is in most cases performed once a day. The mixing center is usually started up during the morning shift and is operated until a new safe stored volume is reached in agglomeration silos for the following operating period. In the event of an increased production (higher production of dry ash), the agglomeration operating time is also proportionally increased. The output of the agglomeration (production of stabilize) is maintained at the upper level of one single mixer. In the course of production, the production mixers are swapped to empty both agglomeration silos, or the production is maintained by mixer no. 3. One work shift in a working week is dedicated for routine maintenance of the technology. Outside of the heating season, the weekend operation (Saturday + Sunday) usually takes place only during the Saturday morning shift.

1.5.7 DRY ASH LOADING STATION

The dry ash loading station technology (NSSP) serves for the collection and subsequent shipment of dry ash transported by pipeline from KYII boilers. Part of the NSSP is the hopper silo for accumulating fly ash from pneumatic transport and for short-term storage before its loading into tank trucks.

Dry ash loading from silos to tanks is performed by a filling nozzle which is firmly attached to the inlet flange of the tank prior to filling. The nozzle is designed so that the ash cannot be released onto the ground after lifting the nozzle from the tank neck.

1.6 BASIC INFORMATION ON NEW EQUIPMENT

1.6.1 PURPOSE OF THE WORK

The purpose of the WORK is to build a wet desulfurization technology for boilers K6 - K10 to ensure the fulfillment of new emission limits in accordance with the requirements of this CONTRACT and pursuant to the conditions stipulated in the Air Protection Act No. 201/2012 Coll. and the subsequent Decree No. 415/2012 Coll. of the Ministry of Environment, which sets emission limits and other conditions for the operation of stationary sources of air pollution. The design emission limits for $TZL \leq 7 \text{ mg/Nm}^3$ and $SO_2 \leq 100 \text{ mg/Nm}^3$ reflect the conclusions of the Best Available Techniques (BAT) Reference Document for Large Combustion Plants; Industrial Emissions Directive 2010/75/EU, as amended. The design emission limit values of $SO_2 \leq 100 \text{ mg/Nm}^3$ are in the so-called BAT+ range of the above mentioned document.

1.6.2 EQUIPMENT TYPE AND CONFIGURATION

Desulfurization method - wet flue gas desulfurization taking place in the newly installed absorber. The desulfurized flue gas will go directly into the new stack installed on the absorber.

The desulfurization equipment is to be used in an outdoor configuration, circulation pumps, suspension pumps, water pumps, limestone (lime) thinning tank in an indoor configuration.

The equipment shall be connected to the existing flue ducts of boilers K6 - K10 in order to allow boilers without desulfurization to operate during their start-up or in the event of desulfurization

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failure. The connection shall be carried out with the plant in operation, the operation of boilers K4 and K5 is presumed.

The following products shall be produced in desulfurization:

- a) stabilizate made by mixing ash, lime, gypsum suspension and water;
- b) energo gypsum;
- c) fly ash.

Products listed under items a) and b) shall certified by the PURCHASER. More detailed information on the products is provided in Chapter 5.3.1.

1.6.3 CIVIL PART

The WORK shall include the provision of all necessary building structures. The building structures shall include the full range of construction deliveries and WORKS within the WORK boundaries, including the preparation and modification of the construction site, land utilities and their connection to the existing ones, all necessary changes to existing building structures, etc.

The construction design shall be a combination of reinforced concrete and steel structures, the foundation of which shall corresponds to the nature of the load and the local geological conditions. Ceramic and silicate materials, including lightweight metal/plastic materials, shall be used for the outer skin. Vertical dividing and infill structures shall be made of traditional masonry materials, assembled from silicate or gypsum components.

1.6.4 BASIC PARAMETERS OF THE WORK

The WORK shall comply with the parameters and conditions set out in Supplement 2 to the CONTRACT, including the manner and conditions for demonstrating these parameters. Penalties for non-compliance with the guaranteed parameters are set out in paragraph 42.2. of the CONTRACT. Other parameters shall be demonstrated by the CONTRACTOR in accordance with the Inspection and test plans and Test programs approved by the PURCHASER - see also Chapter 10 of this Supplement 1 to the CONTRACT– TESTS, TRIALS AND COMMISSIONING and Supplement 3 to the CONTRACT - Documentation.

1.7 WORK STRUCTURE

1.7.1 BUILDING STRUCTURES/UTILITY SYSTEMS

The civil part of the WORK shall be divided into building structures (SOs).

The SOs are further divided into SOs with a character of a structural building (Structural SOs) and SOs with the character of an utility construction (IOs - Utility systems).

Additionally, the structural SOs also include, in addition to the structure itself, their internal installations, elevators and connections to external utilities.

The IOs include technical infrastructure connections to public networks, or to UE networks and internal site engineering networks providing media transport amongst the individual structures.

They also include paved and handling surfaces providing horizontal, or potentially vertical, transportation and handling of materials and raw materials.

The WORK scope includes the following SOs/IOs:

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Building structures:

SO/IO Number	Name
Building structures	
SO 01	Desulfurization
SO 02	Limestone suspension preparation
SO 03	Electrical substation
SO 04	Production and shipment of energo gypsum
SO 05	Energo gypsum storage
SO 06	Dry ash loading station
SO 07	Foundations of steel structures and technological equipment
SO 08	Demolition of part of ZV OSE building
SO 09	Pumping station building
SO 10	Elevator building
SO 11	Emergency tank
SO 12	Electrical wiring for building
Utility systems:	
IO 01	Roads and paved surfaces
IO 02	Utilities
IO 03	Electrical connections
IO 04	External lighting

1.7.2 PROCESS SYSTEMS

The process technology part of the WORK shall be divided into Process systems (PS) and their sub-systems (DPS).

The WORK scope includes the following PSs and DPSs:

PS Number	Name
PS 01	Limestone handling
DPS 01.1	Ground limestone (storage, transportation, dosing)
DPS 01.2	Limestone suspension (preparation, transportations to ABS, pipes)
PS 02	Flue gas ducts
DPS 02.1	Flue gas ducts
DPS 02.2	Flue gas duct flaps
DPS 02.3	Booster fan
DPS 02.4	Wet stack
PS 03	Desulfurization

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PS Number	Name
DPS 03.1	Absorber, tank, droplet separator
DPS 03.2	Suspension circulation
DPS 03.3	Tank mixing
DPS 03.4	Oxidation air
DPS 03.5	Ancillary equipment, backup source
PS 04	Operation tanks
DPS 04.1	Gypsum suspension tank 15%
DPS 04.2	Gypsum suspension tank 55%, hydrocyclone
DPS 04.3	Water accumulation tank
DPS 04.4	Absorber emptying circuit
DPS 04.5	Process water circuit (rinsing and cooling)
DPS 04.6	Operation tank emptying circuit
DPS 04.7	Technological accessories
PS 05	Stabilizate mixing center
DPS 05.1	Pneumatic transportation (ash, lime)
DPS 05.2	Pipeline systems (gypsum suspension, water)
DPS 05.3	Stabilizate mixing and shipment
DPS 05.4	Technological accessories
PS 06	Energo gypsum production
DPS 06.1	Vacuum filter, vacuum station
DPS 06.2	Energo gypsum loading equipment
DPS 06.3	Energo gypsum shipment
DPS 06.4	Other accessories (mixers, pumps, conveyors)
PS 07	Dry ash loading
DPS 07.1	Dry ash route to fly ash silos
DPS 07.2	Fly ash shipment silos
PS 08	Pipe bridges, technological OK
PS 09	Other pipe distribution systems
PS 10	Upgrade of fabric filters
PS 11	High voltage operational distribution system
PS 12	EPS
PS 13	Low voltage distribution systems
PS 14	Measuring and control, central control room expansion
PS 15	Denitrification (fan and piping systems) – not part of the WORK

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PS Number	Name
PS 16	Lime storage and transportation route
PS 17	Raw and saline water route

The CONTRACTOR may propose, where appropriate, additional division of PSs into sub-parts (DPSs) or modify the proposed structure of the WORK into SO, IO and PS, provided that the proposed modifications are submitted to the PURCHASER for approval before using the modified structure.

1.8 MATERIALS, MEDIA A ENERGIES AVAILABLE FROM THE PURCHASER

1.8.1 LIMESTONE

Type 1 (Lime kiln Čertovy schody)

Parameters guaranteed by the PURCHASER:

Constituent/ Indicator	Unit		Limit Value		Measured Value	Usual Range	Note
CaCO ₃	% mass	≥	96	=	98.36		Dry
MgCO ₃	% mass	≤	1.5				Dry
SiO ₂	% mass	≤	1	=			Dry
Al ₂ O ₃	% mass	≤	0.2	=			Dry
Fe ₂ O ₃	% mass	≤	0.2	=			Dry
Moisture	% mass	≤	0.15				Raw
Sieve residue 0.045mm	% mass	≥	12				Raw
	% mass	≤	20				Raw

Indicative parameters:

Constituent/ Indicator	Unit		Limit Value		Measured Value	Usual Range	Note
CaCO ₃	% mass	≥		=	98.36	98.8 - 99.2	Dry
MgCO ₃	% mass	≤				0.65 - 0.95	Dry
SiO ₂	% mass	≤		=	0.25	0.03 - 0.2	Dry
Al ₂ O ₃	% mass	≤		=	0.03	0.03-0.1	Dry
Fe ₂ O ₃	% mass	≤		=	0.08	0.035-0.09	Dry
Sieve residue 0.045mm	% mass	≥				14 - 19	Raw
	% mass	≤					Raw
Specific surface (Blaine)	cm ² /g	≥	3,500	=	3,737		according to Blain
Reactivity B-U	% CaCO ₃		55	=	56.05		according to B-U
Bulk density - freely settled	kg/m ³		900			940 - 990	Raw

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Type 2 (Lafarge Cement)

Parameters guaranteed by the PURCHASER:

Constituent/ Indicator	Unit		Limit Value		Measured Value	Usual Range	Note
CaCO ₃	% mass	≥	68.0	=	70.5		Dry
MgCO ₃	% mass	≤	2.5	=	1.4		Dry
SiO ₂	% mass	≤	20.0	=			Dry
Al ₂ O ₃	% mass	≤	6.0	=			Dry
Fe ₂ O ₃	% mass	≤	2.0	=			Dry
Moisture	% mass	≤	1				Raw
Sieve residue 0.071mm	% mass	≥	25 %	=			Raw
	% mass	≤	50 %				Raw
Sieve residue 0.5 mm	% mass	≤	1 %	=			Raw

Indicative parameters:

Constituent/ Indicator	Unit		Limit Value		Measured Value	Usual Range	Note
CaCO ₃	% mass	≥		=	70.5	70 – 77	Dry
MgCO ₃	% mass	≥		=	1.4	1 – 2	Dry
SiO ₂	% mass	≤		=	16.8	13 – 19	Dry
Al ₂ O ₃	% mass	≤		=	5.3	3.5 – 5.5	Dry
Fe ₂ O ₃	% mass	≤		=	1.8	1.3 – 1.9	Dry
Moisture	% mass	≤			0.6	0.3 – 0.8	Raw
Sieve residue 0.075mm	% mass	≤		=	26		Raw
Sieve residue 0.09 mm	% mass	≤		=	17.4		Raw
Sieve residue 0.2 mm	% mass	≤		=	1.25		Raw
Specific surface (Blaine)	cm ² /g	≥		=	3,416		according to Blain
Reactivity B-U	% CaCO ₃			=	77		according to B-U (UTZ)
Bulk density – freely settled	kg/m ³	≥	700		890	800 – 950	Raw

Type 3 (Kotouč Štramberk)

Parameters guaranteed by the PURCHASER:

Constituent/ Indicator	Unit		Limit Value		Measured Value	Usual Range	Note
CaCO ₃ + MgCO ₃	% mass	≥	96	=	Not provided		Dry
MgCO ₃	% mass	≤	2	=			Dry
Moisture	% mass	≤	1				Raw
Sieve residue 0.045 mm	% mass	≥	12	=			Raw
	% mass	≤	27				Raw

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Indicative parameters:

Constituent/ Indicator	Unit		Limit Value		Measured Value	Usual Range	Note
CaCO ₃ + MgCO ₃	% hm	≥		=	Not provided	97.33	Dry
MgCO ₃	% hm	≤		=		1.07	Dry
SiO ₂	% mass	≤	2	=		1.5	Dry
Al ₂ O ₃ + Fe ₂ O ₃	% mass	≤	0.8	=		0.45	Dry
Fe ₂ O ₃	% mass	≤	0.3	=		0.13	Dry
Moisture	% mass	≤				0.14	Raw
Sieve residue 0.045 mm	% mass	≥				21	Raw
	% mass	≤					
Sieve residue 0.063 mm	% mass	≤	15	=		10.4	Raw
	% mass	≥	4	=			

Type 4 (Lime kiln Vitošov)

Parameters guaranteed by the PURCHASER:

Constituent/ Indicator	Unit		Limit Value		Measured Value	Usual Range	Note
CaCO ₃ + MgCO ₃	% mass	≥	98.4	=	Not provided	Not provided	Dry
MgCO ₃	% mass	≤	0.7	=			Dry
Moisture	% mass	≤	1				Raw
Sieve residue 0.071mm	% mass	≤	5.1				Raw

Indicative parameters:

Constituent/ Indicator	Unit		Limit Value		Measured Value	Usual Range	Note
SiO ₂	% mass	≤	0.9	=	Not provided	Not provided	Dry
Al ₂ O ₃	% mass	≤	0.2	=			Dry
Fe ₂ O ₃	% mass	≤	0.2	=			Dry
SO ₃	% mass	≤	0.01				Dry
Sieve residue 0.05mm	% mass	≤	14.7	=			Raw
Sieve residue 0.09mm	% mass	≤	2.5	=			Raw
Bulk density – freely settled	kg/m ³	=	1100				Raw

1.8.2 LIME (DRY HYDRATE)

Lime CL80-Q (R5 Psv) according to EN 459-1:

Constituent/Indicator	Unit	Value
CaO + MgO	%	≥ 80
Sieve residue 0.09 mm	%	< 25
Sieve residue 0.2 mm	%	< 3

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1.8.3 FUEL FOR DIESEL GENERATOR – DIESEL FUEL

The fuel complies with ČSN EN 590 Automotive Fuels - Diesel - Technical requirements and test methods and complies with standards at fuel stations.

1.8.4 WATER

1.8.4.1 RAW WATER

Indicative parameters:

Constituent/Indicator	Unit	Average	Max. Value	Min. Value
Flow rate/production	t/h	according to connection properties		
pH		7.7	8.7	7.3
K	mS/cm	401	468	339
KNK4.5	mmol/l	1.12	1.41	0.86
Tc	mmol/l	1.09	1.22	0.95
Ca ²⁺	mg/l	26.5	32.46	17.99
Mg ²⁺	mg/l	9.7	13.61433	0
Alkalinity4.5	mmol/l	2.80	4.23	2.15
Sc(tot.)	mmol/l	3.68	5.56	0
Cl ⁻	mg/l	28.6	32.36	25.67
SO ₄ ⁻²	mg/l	83.4	111.68	63.4
CODMn	mg/l	4.64	5.8	3.2
SS	mg/l	0.95	2.2	0.2
SiO ₂	mg/l	9.83	13.379	4.074
Fe	mg/l	0.258	0.754	0.098
Cu	mg/l	9.86	35	3
t	°C	17.1	21.7	11.6

Note: The minimum and maximum flow rate does not reflect the shown combination of minimum and maximum chemical indicators.

1.8.4.2 SALINE WATER

Indicative parameters:

Constituent/Indicator	Unit	Average	Max. Value	Min. Value
Flow rate/production	t/day	334	600	200
K	mS/m	101.9	320.0	21.3
pH		8.6	9.4	4.9
Cl ⁻	mg/l	175	747	2
Alkalinity4.5	mmol/l	2.51	5.16	0.01
CODCr	mg/l	31.4	52.1	15.3
Dissolved inorganic salts	mg/l	685	1592	220

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Note: The minimum and maximum flow rate does not reflect the shown combination of minimum and maximum chemical indicators.

1.8.4.3 FIRE WATER

Pressure in firewater piping system is 0.9 MPa.

1.8.5 ASH

Parameters guaranteed by the PURCHASER:

Constituent/Indicator	Unit	Max. Value
Al ₂ O ₃	%	37
SiO ₂	%	60
Fe ₂ O ₃	%	12
CaO	%	40
Other	%	39

Note: The composition is provided in the base oxidation form. Other types of compounds are not excluded.

Indicative parameters (two year average):

Constituent/Indicator	Unit	Min. Value	Max. Value
MgO	%	0.90	2.25
Al ₂ O ₃	%	2.06	31.83
SiO ₂	%	32.07	55
P ₂ O ₅	%	0.11	0.28
SO ₃	%	1.51	7.47
K ₂ O	%	0.69	2.09
CaO	%	6.57	19.22
TiO ₂	%	1.08	3.20
MnO	%	0.03	0.10
Fe ₂ O ₃	%	3.83	8.28

Note: 1. The composition is provided in the base oxidation form. Other types of compounds are not excluded.

2. The composition shown is influenced by the CaO, MgO, SiO₂ and Al₂O₃ content from the dry desulfurization method. A change in composition with higher CaO content will occur especially when operating into the dry stack.

Ash granulometric composition (sieve residue):

Indicative parameters:

Sieve [mm]	0.075	0.125	0.25	0.5	1
LF	95 – 65%	40 – 65%	15 – 30%	up to 5%	up to 1%
Sieve [mm]	0.25	0.5	1	2	3

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LM	98 – 95%	90 – 60%	65 – 35%	40 – 15%	25 – 5%

The LM ash may contain lumps and agglomerates over 32 mm.

The granulometric composition is impacted by the input from the dry desulphurization method.

Ash production from incineration (LM + LF) averaged in t/h:

Operating mode	Maximum operating state	Operating state 1	Operating state 2	Operating state 3	Operating state 4
Ash production [t/h]	52.01	30.73	21.25	9.71	35.57

Anticipated average ash composition without bed desulphurization operation:

Indicative parameters:

Constituent/Indicator	Unit	Average LM	Average LF
MgO	%	0.47	0.58
Al ₂ O ₃	%	26.00	26.7
SiO ₂	%	53.42	52.11
SO ₃	%	0.47	0.28
K ₂ O	%	0.15	1.29
CaO	%	1.69	2.25
Fe ₂ O ₃	%	6.51	5.58
Other	%	11.29	11.21

Anticipated average ash granulometric composition (sieve residue) without bed desulphurization operation:

Indicative parameters:

Síto [mm]	32	16	8	4	2	1	0.5	
LM	0%	2.0%	4%	7.7%	23.3%	49%	86.9%	
Síto [mm]	0.5	0.2	0.09	0.063	0.045	0.0315	0.02	0.01
LF	0%	2%	22%	39.9%	55.9%	66.64%	76.2%	85.2%

The LM ash may contain lumps and agglomerates over 32 mm.

1.8.6 COMPRESSED AIR

1.8.6.1 CONVEYING AND EQUIPMENT AIR SUPPLY

Parameter	Unit	Max. Value	Min. Value
Operational pressure downstream of compressor	bar (g)	6 ÷ 6.5	
Pressure downstream of compressor	bar (g)	7.8	5.5

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Parameter	Unit	Max. Value	Min. Value
Cooling temperature /freezing – dew point	°C	-40	-25
Free capacity	Nm ³ /h	500 ÷ 1000 *)	
Production energy demand for GP from UE technology	kWh/Nm ³	0.115	

*) Higher capacity upon enquiry

1.8.6.2 CONVEYING AIR

Parameter	Unit	Max. Value	Min. Value
Operational pressure downstream of compressor	bar (g)	3.5	
Pressure downstream of compressor	bar (g)	4.3	2.9
Cooling temperature /freezing – dew point	°C	6	3
Free capacity	Nm ³ /h	1000 ÷ 5000 *)	
Production energy demand for GP from UE technology	kWh/Nm ³	0.102	

*) Higher capacity upon enquiry

1.8.7 ELECTRICAL ENERGY

- R6KYI, 3PE AC 50Hz 6 kV/IT
- R6KYII, 3PE AC 50Hz 6 kV/IT
- R6KTI, 3PE AC 50Hz 6 kV/IT
- R04KYI, 3PEN AC 50Hz 400/230 V/TN-C

1.8.8 HEATING AND RETURN WATER –TKY INTERNAL CIRCUIT

Water	Parameter	Unit	Value
Heating	Temperature	°C	max. 65
	Pressure	MPa	0.5
Return	Temperature	°C	according to circuit load
	Pressure	MPa	0.3-0.4

1.9 LINKS TO OTHER PROJECTS

WORK connection to other projects supplied by other contractors concurrently or prior to the WORK implementation start are not anticipated.

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1.10 BASIC INFORMATION ON MARKING SYSTEM AND EQUIPMENT CODING

1.10.1 POSITION DETERMINATION – X, Y, Z COORDINATE SYSTEM

The general map of the UE premises is available in an AutoCad 2002 format.

The coordinate system is S-JTSK and the Bpv altitude system (Baltic after alignment).

1.10.2 MARKING AND CODING SYSTEM

To identify the supplied structures, systems and components in WORK documentation as well as their physical marking on labels and stickers at the place of installation, the KKS (Kraftwerk-Kennzeichensystem) identification system shall be applied by the CONTRACTOR.

The system shall be used as a single identification system for all parts of the WORK (buildings, machinery, electrical and SKŘ) and shall allow identification on the basis of the function (Process-Related Identification), point of installation (Point of Installation Identification) and spatial position (Location Identification).

The method of application of the KKS identification system must be linked to the marking system of the existing equipment and is subject to PURCHASER'S approval.

1.11 EQUIPMENT AND COMPONENTS USED AT EXISTING PURCHASER'S INSTALLATIONS

UE uses equipment by the following manufacturers:

Item	Manufacturer
Fittings	LDM, KSB
Circulation pumps	KSB, Sigma
Mixers	MUT, Technix
Oxidation blowers	MUT, Technix
Re-circulation pumps	Warman, Sigma, KSB
Nozzles	Lechler
Compressors, blowers	Atlas Copco, Aerzen
Fabric filters	Gutsche
Engines	SIEMENS, ABB
Frequency changer VN	SIEMENS, ABB, Rockwell
Frequency changer NN	SIEMENS, ABB, Schneider Electric
Transformers VN	BEZ, SGB, ABB, ETRA
VN Protection	SIEMENS, ABB
NN Protection	Schneider Electric, SIEMENS, ABB
Switches	ABB, SIEMENS
Cables	KABLO Kladno
Steel switchboards	Elektrifikace Železnice, EGEM, Rittal

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Item	Manufacturer
NN Circuit breakers	OEZ Letohrad, Schneider Electric, ABB
Temperature sensors	ZPA, JSP
Pressure and pressure difference sensors	Emerson, WIKA, Philips, JSP, E&H
Flow rate sensors	FISHER-ROSEMOUNT, Level Instrument, Nivelco, E&H, Emerson, Krohne, BHV
Water level gauges	Level Instrument, Nivelco, E&H, Emerson, Krohne, BHV
Servo drives	ZPA Pečky, Regada, SCHIEBEL, Auma
Cables, conductors and accessories	KABLO Kladno
Components for termination and connection of conductors	SEZ Dolný Kubín
Module housings and switchboards	Rittal
Module instruments and accessories	Schneider Electric, OEZ Letohrad, LOVATO, FINDER,
Circuit breakers and fuses	OEZ Letohrad
Control system	Honeywell - Experion PKS, Siemens
Power circuit breakers	OEZ letohrad
Industrial switches, sockets and plugs	ABB
Instrument and terminal blocks	Elektro VD Bečov nad Teplou, WAGO, OEZ Letohrad,
Fuses, fuse bottoms, heads disconnectors and accessories	OEZ Letohrad
Storage material	KOPOS Kolín
Control lights and control heads	Schneider Electric, Eleco
Contactors, relays and transformers	Schneider Electric, FINDER, LOVATO, SIEMENS, SCHRACK, ABB
House switches	ABB, Elektro SVIT, Vyrtych, Schneider Electric
Measuring instruments, thermometers, clocks	FLUKE, Metra Blansko, Schneider Electric
Lighting fixtures	Elektrosvit, Vyrtych
Light sources	OSRAM, PHILIPS
Steel switchboards	Rittal

The list provided above is informative and does not imply an obligation of the CONTRACTOR to use these manufacturers.

However, due to the unification and reduction of training and maintenance costs, the above mentioned products are preferred by the PURCHASER for use also within the WORK scope.

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2. SCOPE OF SUPPLIES

2.1 SUBJECT OF THE WORK

By signing the CONTRACT, the CONTRACTOR undertakes to execute for the PURCHASER the WORK "Environmental Improvements on TKY II Heating Plant - Wet Desulfurization" in the form of turnkey delivery in accordance with the requirements, conditions, specifications and other data and information contained in the CONTRACT.

The WORK shall include, and "turnkey" should be taken to mean, in particular the following:

- (a) Assessment and evaluation of existing, and potentially the execution of additional, surveys, documentation, information, and data required to perform the WORK.
- (b) Creation and submission of the DOCUMENTATION FOR EXECUTION OF THE PROJECT such as may be required for the due completion of the WORK in the scope and under the terms specified in the CONTRACT.
- (c) Creation and submission of all other documentation required by Supplement 3 to the CONTRACT.
- (d) Construction of SITE FACILITIES such as may be required to complete the WORK as specified in the CONTRACT and to operate the SITE throughout the WORK, including disposal (particularly, with regard to environmental protection, fire safety, and occupational health and safety as required by applicable legislation).
- (e) Provision, i.e., supply and assembly, of the required publicity tools (project / construction information) pursuant to the Rules for Applicants and Beneficiaries and the Required Publicity Graphics Manual published at <http://www.opzp.cz/obecne-pokyny/pravidla-publicity>.
- (f) Arrangement of SITE management and transport to and from the SITE, including offloading, toll duty, taxation, insurance, security, and warehousing of all GOODS, materials, components, etc. required to complete the WORK.
- (g) Demolition / disassembly of existing equipment that is to be replaced by newly installed equipment during the WORK, or that becomes redundant through the completion of the WORK.
- (h) Execution of the construction associated with the WORK in the scope and under the terms agreed in the CONTRACT.
- (i) Provision and assembly of the technology associated with the WORK, including machinery and related systems, monitoring and control systems, and electrical technology in the scope and on the terms specified in the CONTRACT.
- (j) Connection of the WORK to existing structures and systems at the connection points defined in Supplement 1 to the CONTRACT.
- (k) Supply of replacement parts in the scope and on the terms agreed in the CONTRACT.
- (l) Supply of any and all special tools and devices required to maintain the WORK once completed in the scope and on the terms agreed in the CONTRACT.
- (m) Overall coordination of all deliveries of GOODS, WORKS, and SERVICES within the scope of the WORK.
- (n) Management, monitoring, execution, inspection, and documentation of the preparation and realization phases of the WORK, including updates and the provision of required organizational and planning documentation in the scope and on the terms agreed in the CONTRACT.

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- (o) Maintenance of a Construction Log, execution and / or provision of adequate conditions for the execution of expert oversight pursuant to Czech Ordinance no. 499/2006 on Construction Documentation, as amended (the Construction Log to comply with the requirements given in Czech Ordinance no. 499/2006 on Construction documentation, as amended).
- (p) Achievement and documentation of quality characteristics required by the CONTRACT and pursuant to the QUALITY PLAN, including all applicable inspections and tests in the scope and on the terms agreed in the CONTRACT.
- (q) Achievement and submission of all certificates of quality, materials, material testing, assembly progress, completeness, performed inspections, necessary revision reports, protocols, approvals, attestations, consents, and certificates required to execute, operate / use, and gain official approval for the WORK in the scope and on the terms required by the CONTRACT.

Note: Certification of stabilize, energo gypsum and fly ash of fabric filter is the responsibility of the PURCHASER, the CONTRACTOR shall provide effective co-operation.
- (r) Provision of RIGHTS OF USE required for use of the WORK, including relevant documentation, in the scope and on the terms agreed in the CONTRACT.
- (s) Removal of all waste materials arising from the realization of the WORK, on the terms required by the CONTRACT.
- (t) Training of the PURCHASER's operations and maintenance staff, in the scope and on the terms agreed in the CONTRACT.
- (u) Participation of the CONTRACTOR's responsible staff in the discussion and approval of the documentation prepared pursuant to Supplement 3 to the CONTRACT, during GUARANTEE MEASUREMENT, COMMISSIONING, and the official approval for use process, on the terms required by the CONTRACT.
- (v) COMMISSIONING of the WORK, including all relevant tests and inspections and the completion of the WORK on the terms required by the CONTRACT.
- (w) Provision of adequate conditions for the execution of the GUARANTEE MEASUREMENT by an independent entity, and participation in such tests, including the provision and submission of required documentation.
- (x) Provision of guarantees for the quality of the WORK in the extent specified in the CONTRACT and the removal, free of charge, of any defects that may arise during the WARRANTY PERIOD, under the conditions specified in the CONTRACT.
- (y) Cooperation with and support of the PURCHASER in coordinating the WORK with related projects executed by other providers.
- (z) Cooperation with the Occupational Health and Safety Coordinator and compliance with the suggestions, recommendations, and directives of the same.

The CONTRACTOR shall perform, within the scope of the WORK, all WORKS and SERVICES and deliver all GOODS, including those not explicitly listed in the CONTRACT but that may, logically and in view of the CONTRACT, be reliably deduced to be necessary for the correct functioning and completion of the WORK, this on the same terms as if such WORKS, SERVICES, and GOODS were listed in the CONTRACT.

The subject of the WORK consists of the delivery of GOODS, WORKS, SERVICES, and RIGHTS OF USE, and is further specified in detail in the following sections of this chapter and further described in the other DOCUMENTS of the CONTRACT.

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2.2 SCOPE OF GOODS DELIVERIES – CIVIL PART

The supply of GOODS for the civil part of the WORK shall include supplies of GOODS needed for construction work and the complete construction of all building structures and utility systems that are within the scope of the WORK as described in Chapter 1.6.1 of this Supplement 1 to the CONTRACT, including their installation.

These are especially GOODS required for:

- Establishing of construction site facilities;
- Preliminary work, excavations, foundations, potentially induced relocations of utility networks, outdoor lighting, earthing, etc.;
- Construction of complete new structures including their respective installed equipment by building professions (building technology and technical equipment), based on the purpose and needs of the given operation (fire prevention, hygiene, safety and operational requirements). These include, in particular, internal fire water distribution systems, sewerage systems, sanitary equipment, high voltage power lines (including lighting, emergency lighting, wiring for sockets, grounding and conductors), ventilation, air conditioning and heating, including related measurement and control systems. The individual professions shall be provided in sufficient and satisfactory scope be based on the final design of the CONTRACTOR;
- Providing buildings with furnishings;
- Manufacture of steel, concrete structures, hoist rails, platforms, ladders, staircases;
- Building preparation connected with the installation of new machinery equipment, electrical technologies, SKŘ systems and installation of low voltage distribution systems and their anchoring to building structures or as required by power, control and other cable/wire installations;
- Roads, walkways, areas, outdoor lighting and grounding.

Detailed information and detailed requirements for the technical design of the civil part of the WORK are provided in Chapter 4.2. and in Amendment D01.

The individual building structures include in particular:

2.2.1 SO 01 DESULFURIZATION

This SO includes in particular:

- Foundations for the absorber structure connected to the stack;
- Individual foundations for equipment within PS 03 - Desulfurization;
- Retention sump connected to SO 09 – Pumping station building.

2.2.2 SO 02 LIMESTONE SUSPENSION PREPARATION

This SO includes in particular:

- Single-story above-ground structure protecting the process chain for the preparation of the limestone suspension. The below ground segmented sump shall be placed below the level of the foundation plate;
- Heating and ventilation of the building using hot-water heating units.

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2.2.3 SO 03 ELECTRICAL SUBSTATION

This SO includes in particular:

- Single-story building for the installing the electrical equipment and measuring and control equipment;
- Semi-enclosed cable compartment;
- Heating and ventilation of the building using hot-water heating units.

2.2.4 SO 04 PRODUCTION AND SHIPMENT OF ENERGO GYPSUM

This SO includes in particular:

- Three-story steel prefabricated hall housing the pumping station, vacuum stations, energo gypsum silo and shipment facility;
- Heating and ventilation of the building using hot-water heating units.

2.2.5 SO 05 ENERGO GYPSUM STORAGE

This SO includes in particular:

- A new part of the retaining wall, adjacent to the existing retaining wall, including drainage;
- Concrete paved area (built within IO 01 - Roads and paved areas).

2.2.6 SO 06 DRY ASH LOADING STATION

This SO includes in particular:

- Two storage cylindrical magazines on steel structures;
- Dry ash shipping facility.

2.2.7 SO 07 FOUNDATIONS OF STEEL STRUCTURES AND TECHNOLOGICAL EQUIPMENT

This SO includes in particular:

Concrete foundations and footings for anchoring steel structures and pipeline bridge.

2.2.8 SO 08 DEMOLITION

This SO includes in particular:

- Demolition of part of the ZV OSE building.

2.2.9 SO 09 PUMPING STATION BUILDING

This SO includes in particular:

- Single-story reinforced concrete hall for pump housing;
- Heating and ventilation of the building using hot-water heating units.

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2.2.10 SO 10 ELEVATOR STRUCTURE

This SO includes in particular:

- A roofed, staircase tower without outer skin;
- Enclosed elevator.

2.2.11 SO 11 EMERGENCY TANK

This SO includes in particular:

- Concrete foundation for the emergency tank

2.2.12 SO 12 ELECTRICAL WIRING FOR BUILDINGS

This SO includes in particular:

- Lighting wiring (operational and emergency lighting) and socket wiring for all relevant building structures;
- Grounding system and network;
- Protection against operational and atmospheric overvoltage.

2.2.13 IO 01 ROADS AND PAVED SURFACES

This IO includes in particular:

- All roads, paved areas, handling areas within the premises and transportation connections of new structures to existing local area roads;
- Delivery and installation of shoulders, kerbs, barriers, traffic signs and other related works and supplies.

2.2.14 IO 02 UTILITIES

This SO includes in particular:

- Storm water drainage piping from roofs, staging and driving areas, divided into three main sewers;
- Connections from storm water pipes and street inlets.

2.2.15 IO 03 ELECTRICAL CONNECTION

This IO includes in particular:

- Related construction works (excavations, bedding fills, fills, backfills, compaction, etc.) related to cable laying.

The outdoor cable wiring is a part of PS 11 High voltage operational distribution system.

2.2.16 IO 04 EXTERNAL LIGHTING

This SO includes in particular:

- Outdoor lighting of roads and paved areas;
- Supply and installation of discharge lamps, their foundation and supporting structures, fitments;

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- Air traffic warning system for the stack.

2.3 SCOPE OF GOODS SUPPLY – MACHINE TECHNOLOGY, ELECTRICAL EQUIPMENT AND SKŘ

The supplies of GOODS for the WORK process technology shall include the supply of complete technological installations, i.e. the complete supply of equipment, materials, including all overground pipelines connecting existing equipment and all necessary changes to existing equipment, starting with the entry of flue gas, raw materials, auxiliary substances, energies, water etc. and ending at the outlet of the cleaned flue gas from the stack and processing of the desulfurization product.

The supplies hereinbelow shall be part of the machine technology GOODS supplied within the WORK scope:

- Machinery and equipment, including motors.
- Pipes, fittings, accessories.
- Base frames and anchors of all devices.
- Pipeline bridges and steel structures.
- Weighing equipment.
- Safety covers, insulations and other means to protect against mechanical threat from rotating parts, high temperatures and effects of the processed media.
- Safety and protecting equipment of pressure vessels ensuring sufficient depressurization of the container without its destruction in the event of excessive pressure build-up inside the vessel,
- Elevators, lifting equipment (cranes, monorail cranes, hoists, etc.) for simple and quick repairs and maintenance of equipment to the required extent.
- Distribution of service media (compressed air, water, ...).
- Coatings, internal corrosion protection.
- Noise damping covers and their accessories.
- Devices or elements of measuring and control strings normally provided as part of machinery equipment. These are in particular sampling points for all measurements, built-in sensors or sensors requiring special adaptations of technological equipment such as bearing thermometers, thermometers inside electrical machines, etc., direct display measuring instruments without remote signal transmission. The allocation of these supplies between the process technologies and SKŘ is the responsibility of the CONTRACTOR.
- Deliveries of goods necessary for the modification and reconstruction of the existing facility, including adjustments and reconstructions beyond the boundaries of the work where it is necessary to achieve compatibility of the WORK and the existing PURCHASER'S facilities.

The CONTRACTOR may, in logically justified cases, include in the delivery of PS and DPS machinery equipment also some electrical and SKŘ equipment allocated in this Annex 1 to PS 14 – Measurement and control, central control room expansion or PS 11 - Power distribution system. These are the instances where these devices, such as local power switchboard cabinets, autonomous PLCs for process control, etc., are standard equipment of packaged units, or other supplied technological equipment.

In this regard, the CONTRACTOR may, in its supply specification, modify the allocation of supplies among the individual PSs/ DPSs (as opposed to the breakdown provided hereinbelow).

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The supply of GOODS for the electrical part of the WORK shall include, in particular, switchboards, transformers and power distribution systems, lighting, SKŘ power supply.

Supply of GOODS for SKŘ shall include, in particular, the new desulfurization control system including complete measuring circuits, instrument supplementation of central control facilities, modification of existing control systems concerned, cabling, grounding, assembly and consumables

Detailed information and detailed requirements for the technical design of the machine technology part, electrical part and the SKŘ part of the WORK are given in Chapter 4 and in Amendment D01.

Supply of GOODS for the individual process systems shall include:

2.3.1 PS 01 LIME STONE HANDLING

2.3.1.1 DPS 01.1 GROUND LIMESTONE

This DPS includes in particular:

- Filling of ground limestone into silos No. 2 and 3;
- Storage of ground limestone in silos No. 2 and 3, including possible modifications of silos (filling, aeration, de-dusting);
- Transportation and dosing of ground limestone.

2.3.1.2 DPS 01.2 LIMESTONE SUSPENSION

This DPS includes in particular:

- Mixing system for the preparation of limestone suspension;
- Storage of limestone suspension in an underground tank;
- Limestone suspension mixers;
- Limestone suspension circulation pumps and dosing into the absorber.
- Sound damping;
- Lifting equipment for handling and repair.

2.3.2 PS 02 FLUE GAS DUCTS

2.3.2.1 DPS 02.1 FLUE GAS DUCTS

This DPS includes in particular:

- Flue gas ducts from the T-piece to the absorber;
- Injection device for emergency cooling of flue gas;
- Support structures, compensators, flanges, seals, cleaning apertures, etc.

2.3.2.2 DPS 02.2 FLUE GAS DUCT FLAPS

This DPS includes in particular:

- Flaps allowing individual adjustment of the flue gas path for each boiler into the existing dry stack or the new absorber;
- Sealing air blowers or use of air from the existing distribution system.

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2.3.2.3 DPS 02.3 BOOSTER FAN

This SO includes in particular:

- Flue gas booster (ID) fan;
- Sound damping;
- Power control equipment;
- Lifting equipment for handling and repair.

2.3.2.4 DPS 02.4 WET STACK

This DPS includes in particular:

- Wet stack with chemically resistant liner;
- Continuous emission measurement according to legislation (within PS 14);
- Air traffic warning system on the stack (within IO 04).

2.3.3 PS 03 DESULFURIZATION

2.3.3.1 DPS 03.1 ABSORBER, TANK, DROPLET SEPARATOR

This DPS includes in particular:

- Absorber with counter-current sprinkled flue gas;
- Droplet separator installed in upper levels of the absorber.

2.3.3.2 DPS 03.2 SUSPENSION CIRCULATION

This DPS includes in particular:

- Circulation pump circuits leading into individual sections of the absorber;
- Sound damping;
- Lifting equipment for handling and repair.

2.3.3.3 DPS 03.3 TANK MIXING

This DPS includes in particular:

- Set of mixers for mixing the circulating limestone suspension;
- Lifting equipment for handling and repair.

2.3.3.4 DPS 03.4 OXIDATION AIR

This DPS includes in particular:

- 3 circuits of oxidizing air blowers;
- Sound damping;
- Lifting equipment for handling and repair.

2.3.3.5 ANCILLARY EQUIPMENT, BACKUP SOURCE

This DPS includes in particular:

- An independent and self-sufficient backup generator (diesel generator) including fuel tank and control unit must be dimensioned to provide not only a safe shutdown of the equipment

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but also to keep in operation all process equipment required to prevent subsequent damage due to sedimentation, setting, pollution, etc.;

- Sound damping;
- Lifting equipment for handling and repair.

2.3.4 PS 04 OPERATION TANKS

2.3.4.1 DPS 04.1 GYPSUM SUSPENSION TANK 15%

This DPS includes in particular:

- 15% gypsum suspension tank as an intermediate tank for energo gypsum production;
- Suspension feed pump circuit.

2.3.4.2 GYPSUM SUSPENSION TANK 55%, HYDROCYCLONE

This DPS includes in particular:

- Battery of hydrocyclones used to thicken the gypsum suspension;
- Gypsum suspension tank 55%;
- Gypsum suspension mixer.

2.3.4.3 DPS 04.3 WATER ACCUMULATION TANK

This DPS includes in particular:

- Water collecting tank;
- Water collecting tank mixer;
- Water collection pump circuit;
- Sound damping;
- Lifting equipment for handling and repair.

2.3.4.4 DPS 04.4 ABSORBER EMPTYING CIRCUIT

This DPS includes in particular:

- Emergency tank;
- Emergency tank mixers;
- Absorber discharge pump and suspension backflow pump circuits;
- Sound damping;
- Lifting equipment for handling and repair.

2.3.4.5 DPS 04.5 PROCESS WATER CIRCUIT

This DPS includes in particular:

- Rinsing and cooling water tank;
- Raw water filters;
- Droplet separator pump circuits;

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- Pump circuits for washing energo gypsum cake on the vacuum filter;
- Emergency flue gas cooling pump circuits at the absorber inlet;
- Sound damping;
- Lifting equipment for handling and repair.

2.3.4.6 DPS 04.6 OPERATION TANK EMPTYING CIRCUIT

This DPS includes in particular:

- Underground collection sump;
- Collection sump mixer;
- Collection sump pump circuits;
- Sound damping;
- Lifting equipment for handling and repair.

2.3.4.7 DPS 04.7 TECHNOLOGICAL PROCESS ACCESSORIES

- Technological accessories of operation tanks (piping connections, fittings, etc.).

2.3.5 PS 05 STABILIZATE MIXING CENTER

2.3.5.1 DPS 05.1 PNEUMATIC TRANSPORTATION (ASH, LIME)

This DPS includes in particular:

- Pneumatic transport of ash and lime;
- The transportation capacity of the lime route is 13 t/h with regard to the mixing center capacity;
- If separate air supply will be supplied for the lime pneumatic transport, it is necessary to take into account the waste free nature of the technology or the possible location near the compressor station K5/6 and the capacity of the existing disposal of contaminated condensate.

2.3.5.2 DPS 05.2 PIPELINE SYSTEMS (GYPSUM SUSPENSION, WATER)

This DPS includes in particular:

- Pipeline distribution of gypsum suspension and water

2.3.5.3 DPS 05.3 STABILIZATE MIXING AND SHIPMENT

This DPS includes in particular:

- Mixer modification;
- Transportation and shipment of stabilizate.

2.3.5.4 DPS 05.4 TECHNOLOGICAL PROCESS ACCESSORIES

This DPS includes in particular:

- Gypsum suspension feed pump circuits;
- Pipes, fittings.

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2.3.6 PS 06 ENERGO GYPSUM PRODUCTION

2.3.6.1 DPS 06.1 VACUUM FILTER, VACUUM STATION

This DPS includes in particular:

- Vacuum filter;
- Vacuum pump including air tank;
- Filtrate pump circuit.

2.3.6.2 DPS 06.2 ENERGO GYPSUM LOADING EQUIPMENT

This DPS includes in particular:

- Energo gypsum conveyor.

2.3.6.3 DPS 06.3 ENERGO GYPSUM SHIPMENT

This DPS includes in particular:

- Energo gypsum silo with screw conveyor.

2.3.6.4 DPS 06.4 OTHER ACCESSORIES

This DPS includes in particular:

- Pipe distribution systems.

2.3.7 PS 07 DRY ASH LOADING

2.3.7.1 DPS 07.1 DRY ASH ROUTE TO FLY ASH SILOS

This DPS includes in particular:

- Pneumatic transport of dry ash from boilers K6 - K10.

2.3.7.2 DPS 07.2 FLY ASH SHIPMENT SILOS

This DPS includes in particular:

- 2 new dry ash silos;
- Dry ash loading station;
- Relocations and modifications of existing equipment.

2.3.8 PS 08 PIPE BRIDGES, STEEL STRUCTURES

This PS includes in particular:

- Pipe bridges including steel structures;
- Steel structures to support new flue gas ducts.

2.3.9 PS 09 OTHER PIPE DISTRIBUTION SYSTEMS

This PS includes in particular:

- Pipe distribution systems for media transport;
- Fittings.

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2.3.10 PS 10 UPGRADE OF FABRIC FILTERS

This PS includes in particular:

- Fabric filters;
- Upgrading of inlet and outlet filter flaps;
- Modification of the fly ash removal system (if necessary);
- Modifications of the air pressure system for hose cleaning (if necessary).

Note: When modernizing the fabric filters, the corrosive effect of flue gases untreated by desulfurization must be taken into account.

2.3.11 PS 11 HIGH VOLTAGE OPERATIONAL DISTRIBUTION SYSTEM

This PS includes in particular:

All necessary electrical equipment including cabling to power the newly supplied desulfurization process technology TKY II. The delivery shall include, in particular, the following:

- Switchboard 6kV for wet scrubbing power supply;
- Modifications to two existing R6KYII substations for wet scrubbing connection;
- Modifications to six bays of existing 6kV substations for connecting circulating pumps and 1pc of flue gas booster (ID) fan;
- Transformers 6/0.4 kV;
- Main and secondary distributors 0.4 kV;
- UPS for powering the control system;
- Motor wiring installation;
- Cabling, including connection to existing switchboards;
- Main and complementary interconnections;
- Accessories (local control cabinets, switch cabinets, etc.).

2.3.12 PS 12 EPS

This PS shall include in particular:

- Automatic EPS fire alarms;
- Push-button alarms;
- Acoustic and optical alarm signaling devices;
- Cabling including connection to existing EPS exchange.

2.3.13 PS 13 LOW VOLTAGE DISTRIBUTION SYSTEMS

This PS shall include in particular:

- Telephone lines and telephone devices connected to the existing telephone exchange in the existing server room;
- Data connection including switches and sockets connected by optical cable to the existing switch in the existing server room.

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2.3.14 PS 14 INSTRUMENTATION AND CONTROL, CENTRAL CONTROL ROOM EXPANSION

This PS shall include in particular:

- Complete control system equipped with tools for control, protection and monitoring of all desulfurization process technologies;
- PLC based autonomous control systems (if their functions are not integrated into the DCS) supplied as equipment component of process equipment (packaged units);
- Modification of existing control systems related to the WORK (K6 - K10 boiler control system, pneumatic transportation control system, agglomeration mixing control system, dry ash loading station control system, power supply control system) including signal sharing;
- Complete measuring circuits including emission measurements;
- Central control room equipment;
- Control drives and control valves including all auxiliary devices such as power supplies for control drives, etc.;
- Switchboard (cabinets) for transfer relays if used between the control system and the linked systems;
- Internal cabling connecting individual components of SKŘ system including marshalling cabinets, if required by the system, including bearing and support structures and fasteners;
- External wiring for supplied devices connected to the technological equipment and electrical technology and cable route set-up;
- Mounting material for supplied equipment, including cable trays/boxes (if applicable), coating and insulating materials, including the material needed to provide cable routes and fire protection;
- Grounding of all equipment supplied;
- Consumables and media required for putting the supplied equipment into service for at least one year operation.

2.3.15 PS 15 DENITRIFICATION (FAN AND PIPING SYSTEMS)

Note: The process system PS 15 Denitrification is not in the scope of the WORK.

2.3.16 PS 16 LIME STORAGE AND TRANSPORTATION ROUTE

- Lime pneumatic transport;
- Potential modifications of silo 4 (filling, aeration, dedusting).

2.3.17 PS 17 RAW AND SALINE WATER ROUTE

- Raw and saline water piping.

2.4 SPARE PARTS AND QUICK-WEAR PARTS

Spare parts and quick-wear parts shall be supplied in accordance with Section 35 of the CONTRACT.

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2.5 SPECIAL TOOLS AND INSTRUMENTATION

2.5.1 SPECIAL TOOLS

The CONTRACTOR shall supply all the special tools required for the repair and maintenance of the WORK, with special tools being tools, devices, and also assembling, transport and other tools specially designed for assembly/dismantling, maintenance, commissioning and testing of the equipment supplied by the CONTRACTOR such as:

- Equipment for disassembly and installation of all installed equipment for which it is required for maintenance or repair.
- Lifting clamps for dismantling all installed equipment that are required for maintenance or repair.
- Special keys for atypical or inaccessible nuts, resp. connecting elements.
- Equipment for mounting and dismantling of all installed equipment that is required for maintenance or repair.
- Set of tools needed to set up the individual machines.

This equipment shall include, among other things, all assortment of special tools that shall be used by the CONTRACTOR for installation, commissioning, operation and troubleshooting of the WORK. This means that the CONTRACTOR shall not use other kind and types of special tools for these purposes than those concurrently supplied to the PURCHASER.

Special tools shall be delivered in numbers and types corresponding to the usual maintenance method.

Standard, i.e. commonly available tools and aids or parts thereof made by other suppliers are not part of the WORK.

2.5.2 SPECIAL INSTRUMENTATION

The CONTRACTOR shall supply all the special HW and SW instrumentation required for the operation and maintenance of the WORK.

This is especially the special instrumentation required for operation and maintenance, special instrumentation meaning devices specially made for the equipment supplied by the CONTRACTOR. This equipment shall also include special SW products needed for the above purposes, including licenses for installing on standard media and computers, regardless of whether or not these devices and computers are part of the WORK.

This equipment shall include, among other things, the full assortment of special instrumentation that will be used by the CONTRACTOR for testing, commissioning, operation and troubleshooting. This means that the CONTRACTOR will not use other kinds and types of instrumentation other than those concurrently supplied by the CONTRACTOR for this purpose. Special instrumentation shall be delivered in the numbers and types corresponding to the usual maintenance method.

The manner of using the special instrumentation shall be an integral part of the training of the PURCHASER'S administration, operation and maintenance staff and shall also be described in the maintenance work procedures.

Special instrumentation shall be delivered including work procedures for inspection and maintenance.

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2.6 SUPPLY OF SERVICES AND WORKS

Supplied SERVICES and WORKS shall include SERVICES AND WORKS referred to in items (a) to (z) of Chapter 2.1 above, while respecting the requirements and conditions specified in the CONTRACT for their implementation, and in particular:

- Collaboration in resolving possible conflicts between the WORK and the follow-up projects.
- Participation of CONTRACTOR'S representatives in consultations and coordination meetings with the suppliers of the follow-up projects convened by the PURCHASER.

Other obligations of the CONTRACTOR:

- in the field of external environment aggressiveness:
 - perform measurements of the current field and presence of stray currents,
 - measure soil resistivity ($\Omega.m$) and determine its corrosive aggressiveness in the space of buildings of this construction project,
 - determine and incorporate measures against stray currents for all structures and equipment threatened by stray currents,
 - perform basic chemical analysis of groundwater, classification of groundwater and rocks in terms of corrosion aggressiveness for concrete structures,
 - design and implement access to surfaces with corrosion-resistant treatment to inspect the status of the anticorrosive treatment,
 - elaboration of Protocols on determination of external influences for all premises and rooms of this construction project according to ČSN 332000-5-51 ed.3, as amended.
- in hydrogeology:
 - verification of steady groundwater level.
 - performing basic chemical analysis of groundwater, classification of groundwater and rocks in terms of aggressiveness to concrete.

2.7 SOFTWARE USER RIGHTS

Licenses and RIGHTS OF USE will be dealt with in compliance with Section 17 of the CONTRACT.

Licenses and RIGHTS OF USE granted by the CONTRACTOR in accordance with and under the conditions set forth in Section 17 of the CONTRACT shall also include licenses and RIGHTS of USE for the supplied software, with the WORK including in particular:

- Supply of all system software for programmable technical devices (SW performing all standard functions of the control system and allowing communication within the system - operating systems, firmware) including original installation data media.
- Supply of all application software for supplied programmable technical devices (SW created specifically for the solution of specific functions necessary to execute the WORK), including original installation data media.
- Performing modifications of the application SW of the existing control systems, instigated by the execution of the WORK.
- Supply of all software resources necessary for testing, trials, maintenance, modification and further development of supplied programmable technical means, including licenses for their use.

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- Performing modifications to the application software of the new SKŘ, as required by identified deficiencies during the tests, COMMISSIONING, TRIAL OPERATION and in the WARRANTY PERIOD. The WORK shall also include changes in the SW to the extent of 20% of the source files of the entire application SW, instigated by reasons on the part of the PURCHASER, for example, additional PURCHASER'S requirements for SW changes resulting from operational experience gained prior to the expiration of the WARRANTY PERIOD.

3. WORK BOUNDARIES

The outer boundaries of the WORK (supplies) are the boundaries between the WORK and the intact "surroundings" of the WORK where "surroundings" means, within the meaning of this and other similar provisions, the following:

- Buildings, constructions, roads.
- Machinery, piping systems.
- Electrical equipment including existing sources for powering the WORK.
- SKŘ, communication networks.
- Other connected facilities.

The EXTERNAL LIMITS of the WORK are set out as shown below for each area.

The boundaries of the CONTRACTOR'S design work are generally the same as the supply boundaries.

The locations of the connection points are evident from Amendment D01 and Amendment D05.

CP Number	Purpose	Parameters	Connection Point
NB 1	Lime to agglomeration mixing center	Lime: DN 110 PN-91/M-51038 Air: C-DIN 2 ½"	Filling neck of existing lime silo No. 4
NB 2	Limestone for limestone suspension preparation	Limestone: DN 110 PN-91/M-51038 Air: C-DIN 2 ½"	Filling neck of existing limestone silo No. 2
NB 3	Limestone for limestone suspension preparation	Limestone: DN 110 PN-91/M-51038 Air: C-DIN 2 ½"	Filling neck of existing limestone silo No. 3
NB 4	Saline water for limestone suspension preparation	PE 225x20.5	Main saline water distribution system
NB 5	Lime to agglomeration mixing center	800x600	Mixer inlet – inlet part of supply
NB 6	Water from collection tank to agglomeration	DN150, PN16	Mixer inlet – pre regulation flange
NB 7	Gypsum suspension to agglomeration	800x600	Mixer inlet – inlet part of supply

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CP Number	Purpose	Parameters	Connection Point
NB 8	Flue gas for desulfurization	2x(4000x1916) 3x(4000x1199)	Flue gas dust to absorber
NB 9	Flue gas dust into existing dry stack	2x(4000x1916) 3x(4000x1199)	Flue gas dust into existing dry stack
NB 10	Raw water	DN300	Main raw water distribution system
NB 11	Air for technology instrumentation and control equipment	3.5bar DN500 7bar DN250	Main distribution system in boiler room
NB 22	Flue gas to LF K6	8x(1250x1250)	Inlet flanges of inlet flaps to LF K6
NB 23	Flue gas from LF K6	8x(1400x500)	Outlet flanges of outlet flaps to LF K6
NB 24	Flue gas to LF K7	8x(1250x1250)	Inlet flanges of inlet flaps to LF K7
NB 25	Flue gas from LF K7	8x(1400x500)	Outlet flanges of outlet flaps to LF K7
NB 26	Flue gas to LF K8	8x(1250x1250)	Inlet flanges of inlet flaps to LF K8
NB 27	Flue gas from LF K8	8x(1400x500)	Outlet flanges of outlet flaps to LF K8
NB 28	Flue gas to LF K9	8x(1250x1250)	Inlet flanges of inlet flaps to LF K9
NB 29	Flue gas from LF K9	8x(1400x500)	Outlet flanges of outlet flaps to LF K9
NB 30	Flue gas do LF K10	8x(1250x1250)	Inlet flanges of inlet flaps to LF K10
NB 31	Flue gas from LF K10	8x(1400x500)	Outlet flanges of outlet flaps to LF K10
NB 32	Ash from K6	DN150	Pneumatic ash transport route from K6 outlet flange of ash container
NB 33	Ash from K7	DN150	Pneumatic ash transport route from K7 outlet flange of ash container
NB 34	Ash from K8	DN150	Pneumatic ash transport route from K8 outlet flange of ash container
NB 35	Ash from K9	DN150	Pneumatic ash transport route from K9 outlet flange of ash container
NB 36	Ash from K10	DN150	Pneumatic ash transport route from K10 outlet flange of ash container
NB 37	Heating and return water for SO 02	2x DN65	Existing pipe systems of heating and return water
NB 38	Heating and return water for SO 01, SO 04, SO 05, SO 09	2x DN125	Existing pipe systems of heating and return water

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CP Number	Purpose	Parameters	Connection Point
NB 39	Raw water to saline water tank	DN300	Existing raw water filter
NB 40	Sewer system	DN700	Existing sewer system
NB 41	Water system	DN100	Drinking water distribution system in boiler room
NB 42	Fire water		Distributor at boiler K5
NB 43	Heating and return water	DN100	Branch from main distribution system
NB 44	Electrical power for connecting new vn distribution boards	3PE AC 50Hz 6 kV/IT	Busbars in two reserve cells of existing substations R6KYI and R6KYII
NB 45	Electrical power to supply 5pcs of circulating pumps and booster combustion air fan	3PE AC 50Hz 6 kV/IT	Busbars in six reserve bays (fields) of existing substations R6KYI, R6KTI
NB 46	Electrical power to supply new loads in limestone management	3PEN AC 50Hz 400/230 V/TN-C	Existing distribution board 00BFA
NB 47	Control system K6 – K10	Honeywell Experion PKS	Boiler room +7.7 m: K06 – switchboard P06 K07 – switchboard P07 K08 – switchboard P08 K09 – switchboard P09 K10 – switchboard P10
NB47a	Control system Joint operation of K06 - K10	Honeywell Experion PKS	Boiler room +7.7 m: K00 – switchboard 0CJJ01 00CJJ02
NB 48	Control system pneumatic transport and limestone silos	Rockwell Automation	Below limestone silos: Switchboard - 32CJA01
NB 49	Control system dry ash loading station	Siemens S7-1200	Boiler room +17 m for boiler K10: Switchboard– 10ETG30GS001
NB 50	Control system electrical equipment	Micro SCADA	Control room - electrical
NB 51	Emission monitoring	Orgrez SW - EISORNET with ESEP evaluation	Central control room
NB 52	Telephone lines	Existing telephone switchboard	Existing server room (see Amendment D05)

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CP Number	Purpose	Parameters	Connection Point
NB 53	Company network	Existing switch	Existing server room (see Amendment D05)
NB 54	EPS	LITES MHU111	Exchange – in building 30 (Fire station) Concentrators – in building 33 (Small spare parts storage)
NB 55	LF fly ash from silos	Filling neck of tank 35 – 50 m ³	2x outlet orifice for filling holes 450 mm
NB 56	Dewatered energo gypsum	Dump truck/semitrailer truck+trailer 24-50 m ³	Output conveyor (equipment) for loose material loading

Note: Connection points NB 12 - NB 21 are not boundaries of the WORK.

4. REQUIREMENTS FOR WORK TECHNICAL DESIGN

In the specific technical design solutions, it is necessary to take into account the requirements of the PURCHASER referred to in this chapter; however, other requirements of this Supplement 1 to the CONTRACT, such as the requirements for the basic parameters of the WORK (Chapter 1.6.4), the operational requirements (Chapter 5), the maintenance requirements (Chapter 6), the service life requirements of the installation (Chapter 7), as well as other requirements set out in other CONTRACT documents.

4.1 BASIC REQUIREMENTS FOR THE ENTIRE WORK

Proven process and equipment

The WORK shall be based on technology whose operational reliability has been verified in continuous operation and which establishes a prerequisite for meeting the qualitative and performance WORK warranties under the provisions of the CONTRACT.

The work must be carried out in accordance with Amendment D01 (Zoning Permit Documentation - DUR) as waste free technology – closed circuit (regarding water).

All GOODS, i.e. machines, equipment and apparatuses, unless otherwise stated in other CONTRACT provisions, shall be of proven design, first-class quality, verified and proven by references. All types of equipment must be suitable for the purpose, operationally verified, highly efficient, safe, designed and manufactured in accordance with ČSN or internationally accepted standards (unless otherwise specified) and procured from experienced and reliable manufacturers who provide service maintenance of the supplied equipment in Czech Republic. Suitable design shall prevent leakage of operating substances (e.g. from seals of pumps, mixers, etc.), all leakage of the operating substances shall be contained and returned back to the process or disposed of properly.

The accessibility of the individual equipment items for maintenance must be simple, without the need to dismantle other equipment.

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Low maintenance costs

Maintenance costs must be as low as is reasonable and achievable, provided that the intended outcome, in terms of service life and availability, is not affected. These general requirements shall be reflected in the process technology, construction and standardization of the equipment, the general and detailed structuring of the WORK.

Low operating costs

The equipment shall exhibit low mass, energy and water consumption when meeting the specified capacity and complying with all qualitative parameters, in accordance with the requirements of the CONTRACT. This requirement also means optimizing the design concept of the whole WORK in terms of emission reduction efficiency and in terms of consumption of electricity, operation consumables, and all water types.

Process safety

The WORK shall be designed and delivered so as to limit the risks arising from the process. The process must be safe and all necessary precautions must be taken to avoid danger to personnel, equipment and the environment during the start-up, normal operation, planned shutdowns, emergency shutdowns and outages. At the same time, the work must comply with all safety regulations, requirements resulting from the DSP and the requirements of the permitting authorities.

Standardization

The CONTRACTOR must strive to standardize the equipment as far as possible in order to rationalize the operation and maintenance of the WORK, and reduce of the number of spare parts. It is recommended to provide the same kind and type of equipment from one manufacturer. This applies, for example, to pumps, fittings, electrical motors, control systems, connecting material, flange joints, etc. However, this must not have a negative effect on the function, cost and operational reliability of the equipment.

Single marking system

All labels of newly supplied constructions, systems and components shall be made in a uniform manner in accordance with the KKS identification system - see Chapter 1.11.

Emission limits

Emission limits must be respected in the long-term operation and at various wear levels of the sub-assemblies over their service life (e.g. recirculation pumps, spray nozzles, lamellas, droplet separators).

4.2 CIVIL PART REQUIREMENTS

When implementing the civil components of the WORK, the CONTRACTOR shall comply with all the requirements and conditions arising from the CONTRACT and its Supplements.

The CONTRACTOR shall provide detailed design for the solution and execution of each SO, taking into account the needs and requirements of the installed technology, respecting the basic and restrictive conditions of the construction project and other conditions and requirements stated in this Supplement 1 to the CONTRACT and in other documents of the CONTRACT.

The design of all construction structures shall be carried out in accordance with the standards and regulations in force in the Czech Republic, including the regulations for the fire safety of the WORK and operating regulations related to work safety.

When designing structures, the local conditions will be reflected - geological conditions, climatic conditions, corrosive nature of the environment, etc.

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The design of new structures shall reflect the current state especially of the foundation structures of the adjacent and connected structures. When working in the vicinity of the existing buildings, these structures shall not be compromised and damaged by this construction work.

Fire escape routes shall be designed in accordance with fire-protection design of the structures.

Based on the fire-protection technical design, ladders shall be installed on roofs of buildings, dry-risers, firewalls, etc.

4.2.1 APPLICABILITY OF PROJECT DOCUMENTS

The external shape geometry is mandatory according to Amendment D01, the designated construction site must be observed vertically and spatially. The internal configuration and layout is informative and does not have a binding character. The specific solution depends on the CONTRACTOR and must suit the requirements of the machinery and related equipment.

The material and design solutions are a matter of the CONTRACTOR under the condition that the CONTRACTOR proposed solution shall have the same or better parameters than those specified by the PURCHASER in this document.

4.2.2 BASIC REQUIREMENTS

4.2.2.1 REQUIREMENTS FOR GEOMETRIC DEVIATION OF STRUCTURES

The required tolerances are defined by the surveying precision in construction according to the appropriate standards. If the installed equipment and connected systems require stricter requirements in order to ensure their proper functioning, it is the obligation of the CONTRACTOR to ensure these.

4.2.2.2 STRUCTURAL AND STATIC REQUIREMENTS

Unless otherwise specified, the following requirements shall be met:

Load bearing capacity

The initial values for determining the bearing capacity of the subsoil are the values indicated in the engineering geological survey, except each case, where these parameters shall not be in agreement with the data obtained during verification tests performed directly at the CONSTRUCTION SITE.

Tilting

No part of the foundation structures shall have a tendency to lift either by the effect of loading or stress of any nature.

Horizontal forces

Pile foundations must be dimensioned to safely withstand all forces (horizontal load, bending, negative friction, etc.).

Settlement

If stricter values are not required by standards or requirements to ensure the correct function of the equipment, the design limit values for the foundation structures settlement shall be as follows:

Final total average settlement 25 mm;

Differential settlement (relative difference) 5 mm.

In no case the settlement values shall exceed the limits that would prevent or limit the proper functioning of the installed equipment, installations and technology, including their interconnection and media distribution.

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Joint control

When designing concrete structures, the following requirements must be met:

Controlling joints and cracks considered to be particularly undesirable because of the impact on the functionality and service life of the following structures, equipment and spaces:

- All storage spaces;
- Tanks with reactive substances;
- Exhaust pipes and stack for flue gas discharge;
- All areas with requirements for liquid impermeability;
- Below ground-level structures that must be watertight with respect to pressurized or non-pressurized water;
- Walls of buildings threatened by water vapor condensation;
- Walls of structures exposed to aggressive environment.

The following conditions must be satisfied:

- The permissible joint width, depending on the aggressiveness of the environment, must not exceed 0.2 mm for the combination of quasi-static loads (*according to the provisions of the European standard ČSN EN 1992*).

Control of joints considered undesirable with respect to the operation and service life of other structures must satisfy:

- The permissible joint width, depending on the aggressiveness of the environment, must not exceed 0.3 mm for the combination of quasi-static loads (*according to provisions of the European standard ČSN EN 1992*).

Earth pressure

In addition to earth pressure and groundwater pressure, all loads caused by heavy machinery and vehicle movement loads and loads resulting from the interaction of the foundation structures of the surrounding structures must be considered.

Groundwater pressure

The least favorable groundwater level must be determined when designing and assessing structures for the impact of groundwater pressure.

The stability of structure must be verified for an empty building.

4.2.2.3 LOADING

Permanent loading

The respective permanent loads shall be determined for each design situation according to *ČSN EN 1990 ed.2*. The total own weight of the load-bearing and non-load-bearing elements shall be considered in the load combinations as an independent load.

In designing and assessing the structures, the effects of loading of building structures and permanently installed equipment shall be considered. In the design, critical load states shall be determined in those areas where load bearing or non-load bearing elements are to be removed or added.

The loading for storage areas shall be determined on the basis of the unit weight and the design upper height value of the stored materials. For bulk materials, source and moisture content shall be

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defined in design situations. If the stored material generates horizontal forces on walls, etc., these forces shall be reflected in the calculations.

In the respective design situations, water level and earth pressure shall be considered.

Random loading

The respective random loading shall be determined for each design situation according to *EN 1990 ed.2*.

In designing and assessing the structures, the effects of payloads resulting from building usage shall be assessed.

In addition to the aforementioned loading, the following shall be verified:

- Dynamic effects of all equipment and equipment;
- Additional loading induced by heavy vehicle movements;
- Additional loading induced by lifting and handling equipment;
- Additional loading induced by installation and maintenance of devices and equipment;
- Tension caused by temperature changes, shrinkage, construction creep and tension introduced by supports subject to dimensional changes in the technical infrastructure networks;
- Loading of seismic origin.

Extreme loading

When designing and assessing structures, any unexpected operating, testing and emergency situations that may occur (e.g. sudden shutdown of machines) shall be reflected in the calculations.

Climatic and seismic loading

When designing and assessing structures, the effects of wind, snow and ice, as well as the effects of natural and technical seismicity and undermining shall be assessed, if the risk impends.

4.2.2.4 MATERIAL AND EXECUTION CONCEPT

The concrete constructions shall be designed from structural concrete of the prescribed class, if necessary water-resistant concrete with an additive shall be used. In an aggressive environment, concrete with adequate resistance shall be used depending on the groundwater chemistry.

When casting the concrete mixture, the CONTRACTOR shall apply:

- Joint control plates;
- Insulation of work joints;
- Watertight caps of formwork spacers.

Unless required otherwise by standards and regulations, the PURCHASER requires B500B construction steel coupled rebars.

The adverse effects of concrete shrinkage shall be limited by a suitable reinforcement arrangement, for example by installing the reinforcement in the compression area of the ceiling, by suitable concrete casting technology (shrinkage strips), maintaining process discipline, quality treatment of the installed concrete, suitable composition of the concrete mixture, and possibly using concrete attaining the required properties after ninety days (e.g. C25/30 90). The standard concrete used shall attain the required properties after 28 days from casting of the concrete mix. For both plates and walls, the horizontal reinforcement shall be designed for a joint width from forced strains.

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Unless otherwise specified by standards and regulations, the PURCHASER requires load bearing masonry from bricks of P10 to P20 quality on MC10.

Unless otherwise specified by standards and regulations, the PURCHASER requires the use of structural steel S235, S355.

The surface coating of steel structures shall be carried out by the CONTRACTOR by hot dip zinc galvanizing. The respective coating system shall be selected according to the aggressiveness of the environment and the requirements of the fire prevention design.

4.2.2.5 AESTHETICAL AND FUNCTIONAL REQUIREMENTS

The CONTRACTOR shall comply with the following requirements:

Aesthetic requirements

The construction shall be carried out in an industrial area without any major requirements for the architectural visual qualities.

Functional requirements

- The layout of the supporting pillars and beams must not adversely affect the functionality of the equipment and installation;
- All measures to ensure the internal working environment, safety and health of employees and possible visitors (communication and escape routes, walking distances) shall be applied;
- Individual rooms shall be easy to maintain;
- All equipment and installations shall be readily accessible ideally from all sides, serviceable and repairable;
- There must be enough space around the equipment for handling and the possibility of repair and replacement, including transport, must be maintained;
- Transport and road areas shall be designed in terms of safety and accessibility even in exceptional or emergency conditions, regardless of weather conditions.

The following basic design and safety principles shall also be respected in designing the WORK:

- Preference for natural lighting and room ventilation;
- The need to protect from sun irradiation;
- Ensuring the quality of the indoor environment by controlling air parameters by the air-conditioning, ventilation and heating equipment;
- Reduction of energy intensity by the functional use of natural and artificial lighting and ventilation with mutual regulation;
- Quality sound insulation and complying with the indoor and outdoor requirements;
- Structural components exposed to intensive handling operations shall be protected from impact;
- Window cleaning is preferred from the inside of the building, not from a washing platform outside the building;
- All roofs where equipment and installations requiring maintenance shall be installed, shall be provided with rails, although not being walk-in areas;
- All areas and roofs of buildings shall be accessible and a safe maintenance and control system shall be designed;

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- Dead end corridors shall be marked with escape direction.

QUALITY REQUIREMENTS FOR INDOOR ENVIRONMENT

Design temperatures and parameters of the indoor environment shall be determined according to the set of standards *ČSN 73 0540 Thermal protection of buildings*.

Workplace lighting shall be in accordance with *Government Decree No. 361/2007 Coll.* to meet the requirements of visual acuity, comfortable visibility, and employee safety **in compliance with normative values**.

Other sanitary requirements

Depending on the type of room and position of the workplace, other sanitary requirements such as washability, protective showers, eye showers, clean/dirty facilities, clean/dirty work and civilian clothing, waste management system, etc. must be complied with.

4.2.3 STRUCTURAL DESIGN OF BUILDINGS

4.2.3.1 SURVEY WORK

The CONTRACTOR shall provide survey coordinate connection to the national system and delineation of all structures of the WORK by a surveyor and an officially authorized surveying engineer. The xy position coordinate system shall be S-JTSK. To determine the elevation of the WORK, the nation-wide Baltic vertical reference system after compensation (Bpv) shall be used. Elevation points inside buildings shall be made in sufficient quantity at a height of +1.000 m above the finished floor. Invalid point and elevation marking shall be entirely removed.

The CONTRACTOR shall ensure in particular:

- Co-operation of the surveyor and officially authorized surveying engineer;
- Delineating the perimeter of the CONSTRUCTION SITE as defined by the DESIGN;
- Stabilization and marking of local survey network points by markers, their xyz survey to determine the position and height. The PURCHASER shall provide information on the existing local survey network in the premises of Teplárna Komořany;
- Elaboration of the local survey network documentation (survey data points, list of coordinates, network point layout);
- Protecting these points against damage or pollution during construction work;
- Checking the network layout points during construction activity;
- Establishing the spatial position of the WORK in accordance with the drawings approved upon issuance of the zoning permit decision, the issuance of the building permit and the decision on construction changes prior to project completion. The CONTRACTOR shall provide, if necessary, a copy of the local survey delineation drawing, if the drawing of the valid project design is not sufficiently precise and unambiguous;
- Delineate the routes of the existing underground technical infrastructure utilities, based on the documentation and documents of the owner (operator), if they can be impacted by the construction activity. The CONTRACTOR shall always indicate the predicted (estimated) positional uncertainty in the protocol;
- Delineation of the layout and dimensions of the WORK objects;
- Checking of the dimensions of selected geometric parameters of the WORK by surveying methods, measurement of position changes of structures as required by the DESIGN;

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- Measurement of the as-built spatial position and the shape of the WORK and the preparation of the surveying report (drawings, maps), WORK as-built documentation, including the final cadastral site plan.

This inventory is incomplete, the CONTRACTOR shall ensure that the work carried out is in accordance with the effective legislation of the Czech Republic and the technical standards, as amended.

4.2.3.2 DEMOLITION WORK

Demolition work may be carried out only without limiting the operation of the heating plant.

4.2.3.3 EARTH AND FOUNDATION WORK

The CONTRACTOR shall provide in particular:

- Detailed engineering-geological survey needed to carry out the work, the PURCHASER shall provide information from the previous investigation work on the premises of Teplárna Komořany;
- Corrosive properties survey;
- Selection of an appropriate method for carrying out earthwork, taking into consideration local conditions, structural design of existing buildings, operational, technical, economic and safety factors;
- Stability of excavation walls, regardless of their depth, including drainage of the cut by vertical drainage, concurrently with the gradual excavation of the construction pit;
- Executing the necessary earth moving to create operation surface for drilling rigs;
- Execution of boreholes for pile and brace walls and for the execution of piles and braces;
- Implementation of pile and brace anchoring concurrently with the gradual excavation of the construction pit;
- Excavations for all structures that will be built, including spreading and compaction of gravel on the running surfaces;
- Backfilling of space around constructed buildings, creation of embankments and beds of paved areas;
- Removal of excess excavated soil from the CONSTRUCTION SITE, including the creation of necessary in/out accesses/exits to/from construction pits;
- Provide, operate and remove equipment necessary for the execution of works;
- Establishment of areas needed to transport, operate and park the equipment necessary to carry out the works;
- Establishment of access roads and parking places;
- Drainage of the construction pit, drawdown of ground water level;
- Compaction to the prescribed state;
- Delivery and installation of backfill material;
- Removal and disposal of excavated material not used for backfilling, complying with the effective legislation of the Czech Republic;

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- The performance of work by a qualified work team in accordance with the provisions of the given technological process and with the consistent use of collective and personal means of protection.

This inventory is incomplete, the CONTRACTOR shall ensure that the work carried out is in accordance with the effective legislation of the Czech Republic and the technical standards, as amended.

For earthwork generally, the CONTRACTOR shall be able to use also the excavated material and the recycled material from demolition, with prescribed structure or possibly the existing stabilize of the PURCHASER and taking into account the technical conditions. If this material will not meet the criteria for material suitable for backfilling, the CONTRACTOR shall ensure the delivery of high quality backfill material.

The material shall have characteristics corresponding to the specific use prescribed by the DESIGN, given conditions and technical regulations (engineering geology survey, standards, technological conditions, safety measures, etc.).

During the processing and after installing of the material into the earthwork structures, its properties shall be verified and proved by the tests prescribed in the DESIGN, standards and related technical regulations.

The suitability of the backfill material shall be assessed and determined by the CONTRACTOR with regard to the conditions for subsequent final use (i.e. biological reclamation, sowing, grassing) and taking into account the purpose, location and technical conditions of use.

Inappropriate and fundamentally unsuitable materials, taking into account the technical conditions of use, are:

- Frozen, rain or snow-soaked piled soil consisting of cohesive soils (clays, loams, loess);
- Loose soil not complying with the technical and biological conditions of use;
- Loose soil of variable properties whose moisture content does not correspond to the required range.

4.2.3.4 ROADS AND PAVED AREAS

The construction of roads, including the installation of prefabricated components and the installation of the traffic signs, shall be part of the WORK, with a design structure meeting the traffic load requirements according to the relevant standards and the technical certificates.

4.2.3.5 STRUCTURES

4.2.3.5.1 Wall structures

All brick structures shall be constructed by the CONTRACTOR by using a system solution. Lintels of holes and additional fitting pieces shall be part of the masonry system. In the absence of components with sufficient load bearing capacity, reinforced concrete or steel elements shall be used. Mixed masonry shall not be accepted by the PURCHASER.

Brick constructions shall be designed according to the set of standards ČSN EN 1996 and related standards.

4.2.3.5.2 Concrete structures

Concrete shall be imported or produced directly at the CONSTRUCTION SITE. The composition of the concrete mixture shall meet the requirements of the EN 206 standard, based on specific conditions, i.e. the degree of impact to which the concrete shall be exposed in the given environment (e.g. aggressive vapors, condensates).

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Concrete reinforcement shall include all types of reinforcement and necessary construction components, including spacers. When using steel as a reinforcement, the CONTRACTOR shall ensure good mutual cohesion, necessary anchoring lengths and reinforcement overlap, required thickness of the cover layer with regard to the specific conditions and fire resistance, the principles for reinforcement design shall also be adhered to.

The quality and structure of the formwork surface shall be governed by the relevant provisions of the standards. The formwork will be carried out by the CONTRACTOR including all reinforcement elements. Edges shall be cambered by insertion of triangular strips. The WORK shall also include the construction of a eaves at the ledges and awnings and filling the mounting holes.

The WORK shall also include all holes and grooves for the installation of wiring, holes for rail anchoring, lift structures, installation holes, blinds control apertures, etc. Additionally also the installation of required anchoring elements for the following installation of technological, machine and transport equipment, construction, steel, locksmith's or joinery construction elements and anchoring elements for the perimeter skin.

Waterproof concrete shall be required for structures that are or could be subjected to long-term one-sided exposure to water pressure.

These include in particular:

- Liquid storage;
- Construction below ground water level;
- Sumps and tanks;
- Engineering utility networks and tunnels;
- Construction of waterworks (pumping station, etc.).

Prior to covering the structures, the CONTRACTOR shall provide proof of impermeability of the structures for which this property is required.

Concrete structures shall be designed according to the set of standards ČSN EN 1992 and related standards.

4.2.3.5.3 Steel structures

The supply of steel structures shall include manufacturing documentation, production, storage, transport and material handling.

All welds on steel structures shall be ground by the CONTRACTOR smoothly and leveled by a filler before the base coat is applied.

Welding work shall be carried out by authorized persons within the meaning of the applicable legal regulations and standards.

The supply of steel structures shall also include the supply of surface treatment by galvanizing in the thickness of 100 µm, priming and finishing, including fire protection coating with guaranteed anticorrosive protection of minimum 10 years.

The composition and resistance to external influences of the surface coats shall reflect the respective category of aggressive conditions at application location and the requirements of the fire protection design.

The steel structures will be supplied by the CONTRACTOR including all anchoring and fitting elements.

The steel structures shall be designed according to the set of standards ČSN EN 1993 and the related standards; welding checks are necessary as required.

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4.2.3.6 COMPLETION

4.2.3.6.1 Outer skin

The CONTRACTOR'S supply shall include the primer and final coating, coating of the required color shade, all the bearing grates that will be an integral part of the system facades.

The outer skin shall meet the thermal and technical requirements according to the set of standards ČSN 73 0540 *Thermal protection of buildings* at the time of the DESIGN development.

The type of material used shall be based on the requirements for thermal, mechanical and technological properties at the specific location of installation, including compliance with fire prevention design.

The design of the thermal protection system shall include calculations and verification of the construction details regarding the possible presence of thermal bridges and the occurrence of condensation of water vapor in structures or on their surfaces.

In the event that condensation of water vapor cannot be avoided, the CONTRACTOR shall take steps to control its occurrence, including the protection of exposed structures and condensate drainage in order to avoid degradation of the material, including surrounding structures.

The outer skin shall will be equipped with all fittings, safety devices, glazing, sealing joints between the frame and the building structure, all vertical and horizontal contact and other thermal insulation, including potential vapor barriers or other waterproofing. All skirting, expansion, corner and transition bars of the outer skin shall be supplied.

All materials used shall be certified for use in the proposed structure. The CONTRACTOR shall reflect mutual compatibility of used materials.

4.2.3.6.2 Infill of holes and openings

Completed infill of holes and openings shall meet the requirements of the following standards, as amended:

- ČSN 73 0540-2 Thermal protection of buildings - requirements;
- EN 14351-1 Windows and doors;
- ČSN 74 6077 Windows and doors - Requirements for Installation.

Infills of holes and openings shall be provided with all the accessories and supplements to ensure the functionality of the PS and TZB systems.

They will also meet the requirements of:

- Fire resistance;
- Impermeability to smoke;
- Mechanical resistance and stability;
- Thermal insulation;
- Sound insulation;
- Air permeability;
- Waterproofing;
- Resistance to wind load;
- Burglary protection.

Windows

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Interior windows

Aluminum frame construction, powder coating, flat float clear glass min. 4 mm, anodized light metal fittings.

Exterior windows

Aluminum frame construction, powder coating, interrupted thermal bridge profiles, double insulating glass pane, "warm" spacer frame, anodized light metal fittings, external window sill from anodized aluminum, inner sill water resistant laminated splinter board.

Glass facades

System of profiles, seals and accessories for vertical façade structures. In interior supporting steel profiles hot dip galvanized, in exterior aluminum cover strips.

Interruption of thermal bridge on the principle of sealant free glazing.

Doors and gates

Interior doors

Minimum clear dimension 800/1970 mm, galvanized steel, splinter board inside, powder-coating/plastic sheet, frame - galvanized steel, with powder-sprayed basecoat, interior fittings metal, cylinder lock, door closer, plastic wall mounted stop.

Security doors

Minimum clear dimension 800/1970 mm, galvanized steel, all-metal double-walled inside with longitudinal and transverse reinforcements, powder-sprayed coat/plastic sheet, galvanized steel door frame with powder-sprayed primer, metal safety locks, multipoint security lock, door closer, plastic wall mounted stop .

Fire doors

Minimum clear dimension 800/1970 mm, galvanized steel, inside material according to the required fire resistance, powder-sprayed coating/plastic sheet, metal fire resistant door frame with peripheral seal and powder-sprayed primer, cylinder lock, door closer, panic handle, sign, plastic wall mounted stop.

Gates

Industrial, in sections, self-supporting construction, motor shaft drive with the possibility of manual operation by chain, steel double walled galvanized, finish powder-spray coat, mechanically resistant, sealing on four sides along perimeter and in-between the door sections, partially glazed, thermally insulated, with electronic security and access control, protection from lifting, fall and crushing, protection of the lower edge against obstructions or persons, drive with a smooth start (frequency converter). The size of the door shall enable the dismantling and installation of all installed equipment and parts of the technology.

Ventilation grids

Fitted into a façade with a flap connected to the control system, aluminum, protection against rain.

Hatches

Surface treatment against corrosion, folding, mechanical opening, watertight and odor tight seal, loading according to the requirements of the adjacent area (500 kg/m²). Possibility of manual handling.

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4.2.3.6.3 Waterproofing

The waterproofing elements of the WORK shall be designed by the CONTRACTOR according to ČSN P 73 0600 based on the specific hydraulic and physical stress, the waterproofing class depending on the type of protected area and the accessibility of the waterproofing structures.

The waterproofing of reservoirs, sumps and tanks exposed to a chemical aggressive environment shall be designed by the CONTRACTOR based on the degree of aggressiveness of the environment. The waterproofing system shall preferably be executed by chemically resistant coatings (e.g., a crystallization or epoxy coating). The functionality of the system shall be verified by tightness tests by the CONTRACTOR.

Roof structures within the WORK shall be designed by the CONTRACTOR according to ČSN 73 1901. They will be equipped with a complex system of liner waterproofing based on softened PVC. The selected material shall meet the conditions of resistance to external factors, including heat stress, ultraviolet exposure and acid rains. Expansion joints, interconnections and transitions of individual structures shall be designed using system elements, using the recommended details of the supplier. The roofs shall be constructed with a gradient of 1.0% minimum.

In wet operations (e.g. showers), the CONTRACTOR shall apply waterproofing sealant extending up the wall (minimum 0.15 m, in showers up to 2.0 m height). The waterproofing sealant shall be reinforced in the corners by a reinforcement mesh.

The liner systems shall be installed by the CONTRACTOR inclusive of the complete accessories and tin smith elements made of hot dip galvanized sheets with plastic coating.

All used materials shall be certified for use at the proposed composition. The CONTRACTOR shall reflect the mutual contact compatibility of the materials used.

4.2.3.6.4 Acoustic insulation

The CONTRACTOR shall verify all acoustic descriptors (reverberation, speech intelligibility, noise loading, spatial attenuation) with respect to the function of the given rooms (corridors, operating and technical rooms, etc.). The CONTRACTOR shall provide all measures to meet sanitary requirements and comfort of the working environment.

Depending on the requirements for the acoustic properties of the structures, the following shall be used:

- Step noise attenuation in flooring layer structure;
- Acoustic insulation in the partition wall structures;
- Reflective or absorbing acoustic panels to manage reverberation and attenuation;
- Attenuation sleeves on utility installations and insulation of installation cores.
- In buildings where acoustically protected areas shall be located, the partition structures shall meet the parameters for attenuation and prevention of acoustic permeability and shall meet the sanitary required sound pressure levels at workplaces.

4.2.3.6.5 Vibration and shock damping

The CONTRACTOR shall design and assess any equipment producing dynamic effects with potential negative effect on the functionality, reliability and safety of the installed equipment, the mechanical resistance and stability of the surrounding structures and the sanitary requirements required by the legislation as amended.

These are in particular the following:

- High performance fans on block foundations;

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- Piston or rotary compressors and blowers, usually on block foundations or on vibration damping frames;
- Transport equipment - cranes, vibratory belt conveyors and lifts;
- High performance pumps;
- Vibration of pipelines due to turbulence of the flowing media;
- Flexible connection of compressors and blowers and parts of technology to fixed pipelines;
- Other technological and transport facilities generating dynamic effects.

For the reliable design of structures and foundations carrying equipment producing dynamic effects, the following requirements shall be met:

Requirements for operability:

- Limit criteria for mechanical vibrations under steady forced oscillation at the foundations of rotating machines or their non-rotating components (especially at bearing locations of rotating systems) according to the requirements of the supplier (manufacturer) of the equipment, the relevant standards (e.g. ČSN 12 2011 for fans) or sanitary regulations;
- Permissible vibration level of foundations at the location of equipment sensitive to the level of mechanical vibration (e.g. laboratory scales, spectrometers, etc.);
- Limit values of oscillation response expected to produce visible failures on construction bearing and non-load-bearing structures;
- Compliance with normative requirements for limit vibrations at the workplace and in protected areas of buildings, as stipulated in the Government Decree No. 272/2011 Coll. on the protection of health from the effects of noise and vibrations;
- Structures on which the equipment shall be installed and connected must not resonate with the operating speed of any machine component or technological distribution system components.

Bearing capacity requirements:

- Response amplitudes of internal forces or stress in the structure, as established by a dynamic calculation when considering maximum dynamic loads, shall be evaluated.
- Design assessment for high-cycle fatigue stress.
- Elastomer or neoprene bearings and spring vibration isolators shall be used to dampen vibrations and vibrations.
- The functionality of damping bearings and spring insulators shall be ensured even in the event of a fire.
- The CONTRACTOR shall design such measures as to eliminate undesirable vibrations, to ensure the required sanitary values at the workplace in the protected areas with regard to vibrations. Workplaces where such parameters cannot be attained must be dealt with by instituting operating rules in accordance with the sanitary regulations.

4.2.4 REQUIREMENTS FOR TECHNICAL EQUIPMENT OF BUILDINGS – TZB AND INFRASTRUCTURE NETWORKS

Requirements for internal networks of technical Infrastructure:

- The WORK shall include the supply of necessary certificates of products, pressure vessels, pressure and operating tests, adjustment and regulation of all systems, including provision

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of protocols, operating regulations and operating rules, provision of inspection reports, instructions in the Czech language and training of operators.

- The WORK shall include the supply and installation of all the thermal, fire protection and acoustic insulation of the technical infrastructure lines.
- The CONTRACTOR shall properly anchor all distribution systems and their terminals and provide and install suitable elements ensuring expansion in length or volume. The anchoring and compensating elements shall be provided with surface finish ensuring sufficient corrosion and fire resistance throughout the proposed lifetime.
- The CONTRACTOR shall ensure that all TZB and associated distribution systems shall be protected against harmful transmission of vibrations to the surrounding structures and against the emissions of excessive noise according to valid standards and legislation.

The installed distribution systems shall be visibly and orderly arranged in the installation troughs and bridges.

In reinforced concrete structures, the ducts shall be conducted through pipes and boxes designed for inclusion in formwork and subsequent concrete casting.

All parallel lines and crossings of individual installations shall be installed according to valid standards.

The CONTRACTOR shall provide media flow marking on the pipelines, marking on wiring including sockets and ports, accesses, operating pressure and settings, pump setup to specified speeds, fire flaps, and supply of and information system required for trouble-free operation and proper maintenance.

The CONTRACTOR shall route, conduct and interconnect the internal wiring, design its material composition, install cleaning and inspection fittings and provide conformance reports according to valid regulations and standards. The CONTRACTOR'S design must provide a system solution with straight lines, simple and repairable, for example, by routing through installation cores or troughs.

Requirements for external network technical infrastructure:

- Prior to the commencement of earthwork, the CONTRACTOR shall ensure surveying of all underground utility networks concerned and the identification of their position in the field, including their identification.
- All earthwork shall be carried out by the CONTRACTOR according to valid standards, regulations of local authorities and according to the requirements of administrators of individual networks.
- The WORK shall include the excavation, lagging, bed fills, laying of pipes, including all fittings, pipe fittings and inspection manholes, the implementation of warning and protective layers, the execution of concrete works, providing filling and pipe backfill and their compaction, removal of material to a landfill, surface recovery to original condition.
- Crossings and parallel runs of the designed cable routes with other underground utility networks shall be carried out by the CONTRACTOR in accordance with ČSN 33 2000-5-52 ed.2 and ČSN 73 6005. At the road crossings, the utilities shall be enclosed in a protective tube.
- Utility protection tubes under roads shall be made of non-corroding material.
- The CONTRACTOR shall provide utility connections with an identification tag and a warning liner that will be laid over the pipe.

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- The material shall have the characteristics corresponding to the specific use prescribed by the DESIGN and reflect the local conditions and technical regulations (engineering geological survey, standards, technological conditions, safety measures, etc.).
- During processing and after incorporation of the material into the earth structures, the CONTRACTOR shall verify and prove its properties by tests prescribed in the DESIGN, standards and related technical regulations.
- Backfill material shall be used by the CONTRACTOR with regard to the conditions for subsequent final use (i.e. biological reclamation, sowing, grassing) and taking into account the purpose, location and technical conditions of use

Inappropriate and fundamentally unsuitable materials, taking into account the technical conditions of use, are:

- Frozen, rain or snow-soaked piled soil consisting of cohesive soils (clays, loams, loess);
- Loose soil not complying with the technical and biological conditions of use;
- Loose soil of variable properties whose moisture content does not correspond to the required range.

4.2.4.1 SANITARY TECHNICAL INSTALLATIONS

4.2.4.1.1 Sewer

External sewer system

The sewer connection shall be designed by the CONTRACTOR according to ČSN 75 6101 *Sewerage networks and sewerage connections*. The route shall be as short and straight as possible in a single slope.

Minimum connection slope:

DN <150 gradient 2%

DN ≤ 200 gradient 1%

Maximum 15% gradient (exceptionally 40% when securing the pipeline against displacement).

The pipes shall be installed by the CONTRACTOR in excavations with regard to the soil composition (sand bed, concrete saddle, concrete saddle with construction site drainage, concrete saddle with gravel/sand bed with construction site drainage), backfill shall consist of fine material to a height of 300 mm above the upper edge of the pipe, after compaction to be backfilled with upper layer.

The sewer connection shall be designed by the CONTRACTOR in sufficient distance from the foundations of the structures and other parallel lines, taking into account the depth of excavation under the grade, the depth of structure foundations below grade and the angle of the internal friction of the soil.

Drainage of paved areas and land shall make maximum use of the terrain grade and use on site drainage. The CONTRACTOR shall provide inspection and cleaning manholes on the pipe system.

Drainage

Drains shall provide drainage of excessive water from foundation structures of both land and utility networks and roads. The CONTRACTOR shall complete them from system components, secure against clogging and allow for inspections and checks. All drains shall be routed to the sewer system.

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4.2.4.1.2 Ventilation, air conditioning

The incoming ventilated/airconditioned air shall meet the requirements of *Government Decree 361/2007 Coll., Laying down the conditions for the protection of health at work*. The incoming air shall contain a such proportion of ambient air sufficient to reduce the concentration of gaseous substances and aerosols below the exposure limit values and the maximum admissible concentrations.

For forced ventilation, the incoming air shall be filtered and heated in the winter.

The CONTRACTOR shall design the route, connections, material of the system, and provide it with cleaning and inspection fitting pieces, flaps, regulating elements and provide conformance reports according to valid regulations and standards.

In rooms with excessive heat generation without permanent presence of operators (e.g. floors with process technology, control systems, substations), the CONTRACTOR shall ensure the indoor environment is adjusted to the required operating temperatures according to the requirements of the equipment. Air-conditioning units with air filtration, cooling or heating shall be installed to ventilate these spaces, which will provide temperature adjusted ambient air on the basis of indoor measurements and maintain a temperature within the specified operating temperature range.

The design of the ventilation system shall respect the requirement for maximum waste heat recovery. The system supplying air to the building shall provide heating of the incoming air in winter by mixing and/or recuperation. Waste heat will also be used to heat rooms without heat originating from equipment.

In the summer, the ventilation of the hall operating spaces shall be supported by wall and roof fans drawing air through the blinds from the outside.

Hot water heating

Hot water heating of the substations and spaces with electrical equipment shall be carried out so that potentially dripping water is safely drained to places where it cannot disrupt the operation of the electrical equipment.

4.2.4.1.3 Electrical installation in structures

In the individual SOs, the indoor electrical installations in buildings shall include the design, supply and installation of heavy and light current systems, grounding, lightning protection, switchboard equipment, lighting and sockets. The installations shall also include electrical wiring for heating, ventilation, cooling and air conditioning of indoor building environments, for sanitary technology, control, monitoring and regulation, power supply for automatic gates and doors and other equipment in buildings.

The indoor electrical installations must comply with, in particular:

- Safety of persons and property;
- Operational reliability in the given environment for the particular mode of operation and environmental impact;
- Clearly arranged system layout, enabling quick localization and elimination of possible failures;
- Easy adaptability of the system for the relocation of electrical equipment and machines, when required;
- Economic efficiency in capital and operating costs;
- Aesthetic properties;

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- Prevention of adverse effects and disturbances in crossings and parallel installations with communications lines.

Heavy current wiring

In the individual buildings it shall be used for:

- main, backup, emergency (escape) lighting;
- socket wiring 230 V, 400 V for occasional use (cleaning and maintenance);
- connection of non-technological appliances.

The electrical devices shall be connected by the CONTRACTOR to the main switchboard of the building. From this switchboard, each secondary lighting and motor switchboard shall be connected.

The electrical installation shall include NN switchboards, cabinets (socket, control), separate devices (luminaires, switches, sockets), connecting wiring (cables), storage and protective structures, working and protective grounding.

Grounding

The CONTRACTOR shall provide grounding by a metal strip conductor FeZn, with cross section according to valid technical standards. The grounding resistance of one lead will not exceed 10 Ω . Connections in the ground shall be protected against corrosion. Safety signs shall be installed on the leads, prohibiting presence of persons during storms within distance of 3 m. Connecting strips shall be provided in all technical and machine spaces, elevator shafts and the foundations of the transport equipment.

Voltage compensation

The voltage compensation shall be implemented by the CONTRACTOR according to valid technical standards, by coupling all installed technical systems and conductive technical installations by a connection to the main voltage compensation rail.

Lightning protection devices

All over-ground SOs shall be equipped by the CONTRACTOR with protection against lightning in accordance with the set of standards ČSN EN 62 305, based on the determination of the lightning protection class. Any conductive features of construction on the facade shall be reflected by the CONTRACTOR.

Non-conducting roof superstructures, as well as their technical equipment with electrical connections to the inner part of the building, shall be protected by the collecting rods.

Conductor installations

Conductor wiring shall be carried out by the CONTRACTOR according to the valid technical standards and recommendations of manufacturers. In the design, the CONTRACTOR shall take into account in particular:

- Electrical current loading;
- Local conditions where conductors are installed;
- Bending radii;
- Protection against mechanical damage;
- Cable routes shall be reliably separated by partitions between heavy and light current conductors. Metal carriers shall be included in the balancing potential.

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Switchboards

All switchboards shall comply with the requirements of ČSN EN 61439. The switchboards shall be supplied by the CONTRACTOR as steel sheet cabinets enclosed from all sides, including a base with a degree of protection reflecting the given operation and the environment according to the international standard IEC 60529, and with all the accessories.

Lighting

The lighting shall meet the requirements of ČSN EN 12665 Light and lighting - Basic terms and criteria for specifying lighting requirements. The design of artificial lighting shall be carried out by the CONTRACTOR on the basis of ČSN EN 12464 Light and lighting - Lighting of work places. Emergency lighting shall be designed by the CONTRACTOR according to ČSN EN 1838 Light and Lighting - Emergency lighting.

The types of luminaires shall be designed by the CONTRACTOR with respect to the type of operation and environment. The nominal current of the luminaires shall under no circumstances exceed the nominal current of the circuit protection instrument. The switches shall be installed by the CONTRACTOR based on the type of wiring, type of electrical distribution, type of material on which the wiring is installed, and the local conditions. The location of the switches shall be 1.2 - 1.5 m above the floor. Switches next to doors shall principally be on the side where the door opens so that they are not covered by the opened door.

The main lighting shall be designed by the CONTRACTOR according to the nature of the work activities and usage of the illuminated spaces, mainly by fluorescent lamps, part of them with emergency modules-converters.

Backup lighting shall be, where suitable for the nature of operations, part of the main lighting, but with separate circuits backed by a backup source

Emergency lighting shall be provided, where suitable for the nature of operations, by main system luminaires supplied by own power source (NiCd-accumulator) or potentially own luminaires with own sources connected to the lighting circuits.

Sockets

Sockets shall be installed by the CONTRACTOR according to voltage, current, type of environment and type of material on which the socket is installed. The number of sockets shall be governed by the requirements of the operation, installed equipment and technology. For permanently connected single-phase appliances with a power input of more than 2 kVA or more, fixed protected separate circuits shall be installed by the CONTRACTOR. Heating units with power consumption of over 2 kVA and appliances from 4.4 kVA will be connected to separately protected three-phase circuits.

The **socket wiring** shall provide the connection of standard equipment according to operation, housekeeping and maintenance needs. This will include installed appliances with motors: HVAC, sanitary appliances, heating and other electrical appliances of the building.

Backed up circuits shall provide power to several important equipment items in the event of a power outage. Selected equipment shall be connected to backed up circuits powered from the backup power supply in the event of a power outage. This is primarily equipment serving for evacuation, personal and property protection, elevator emergency service, exhaust fans, opening of holes, lifting, handling and testing facilities within the workshops.

Light current installations

The CONTRACTOR shall install in the buildings light current appliances and internal wiring that shall be designed within PS 12 to PS 14.

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4.2.4.2 OUTDOOR LIGHTING

The lighting of roads shall meet the requirements of the set of standards ČSN EN 13201 Road lighting.

Outdoor lighting shall consist of discharge lamps or LEDs mounted on galvanized steel tube poles without anchor base, or on booms on building walls or piping bridges. The lights shall be positioned so that no light smog occurs.

4.2.4.3 LIFTING EQUIPMENT

Crane runways, monorail cranes and mobile structures

The spatial layout, construction design, tolerance, measurement and rectification shall be in accordance with ČSN 73 5130 Crane Runways.

The lifting and assembling equipment shall be delivered part of machine technology.

Freight elevator with passenger transport

Minimum requirements:

- Capacity: 1600 kg
- Lifting speed: 0.63 m/s
- Door opening size: 2.2 x 2.3 m
- Cab dimensions: 2.5 x 2.9 x 2.3 m

The elevator cabin finish shall be stainless steel. Protective hardwood impact strips on the side walls of the cabin. Fluorescent lighting with emergency lighting. Key control for operator, STOP, bell, overload signal with signaling to central control room or gatehouse. Cabin doors automatic. Electronic elevator switchboard, microprocessor. Elevator control by push buttons indoors, and outdoor control - call + send at each station. Elevator drive with smooth start (frequency converter).

The information provided represents only the minimum requirement for the lifting equipment. It is the CONTRACTOR 's obligation to adapt the technical parameters of the lifting equipment to the intended operation and purpose.

4.2.5 SPECIFIC REQUIREMENTS FOR THE DESIGN OF INDIVIDUAL BUILDING STRUCTURES

Specific requirements for the execution of individual building structures are provided in Amendment D01.

4.3 REQUIREMENTS FOR MACHINE TECHNOLOGY, ELECTRICAL EQUIPMENT, SKŘ AND RELATED EQUIPMENT

4.3.1 APPLICABILITY OF PROJECT DOCUMENTS

The initial conceptual design for the main wet desulfurization processes is provided in Amendment D01, Supplement 1 to the CONTRACT.

This is a design developed in the preparatory stage of project documentation and represents one of the possible process technology solutions.

The binding obligation regarding the WORK is to comply with the technical conditions provided in this Supplement 1 to the CONTRACT and its amendments, the initial and restrictive conditions at the installation site (including the dimensional and height limitations of SOs where the equipment is to be installed) and other requirements specified in the CONTRACT.

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While respecting this condition, the CONTRACTOR and its subcontractors have the full freedom to apply their best knowledge and engineering practice regarding the design and construction in terms of process technology and functionality and to offer to the PURCHASER the Best Available Techniques (BAT).

The CONTRACTOR designed solution must not reduce the usability, service life and operating characteristics of the existing process technology equipment.

4.3.2 COMMON REQUIREMENTS FOR EQUIPMENT OF PROCESS SYSTEMS AND THEIR SUBSYSTEMS

4.3.2.1 BACK-UP SCOPE OF MACHINE COMPONENTS

Unless the required extent of backup is further specified in the requirements for the execution of the individual PSs and DPSs, the choice is the responsibility of the CONTRACTOR.

4.3.2.2 REQUIREMENTS FOR MAIN EQUIPMENT

Note: "Lining" in the following text means any method of protecting the equipment from abrasion, erosion and negative chemical effects, while meeting the requirements of the PURCHASER.

Absorber

The design of the absorber shall ensure a uniform distribution of the absorption suspension throughout the cross-section of the absorber and prevent its overflowing under all possible operating conditions. At the same time, it is necessary to minimize sedimentation and deposition.

The absorber shall have a durable structure, reflecting the demanding corrosive and erosive environment with internal lining or protection by corrosion-resistant and abrasion-resistant material with a minimum chloride resistance of 20,000 ppm. The bottom of the absorber shall be sufficiently graded towards the drain. The gradient of the slope shall be determined by the CONTRACTOR.

In the flue gas inlet zone, where hot gas enters, refractory, corrosion and erosion resistant material is required.

In areas with high abrasion, such as an injection zone where the suspension is injected against the lining or protection, high-resistance material shall be used for lining or protection.

The CONTRACTOR shall prove by documentation or other evidence the suitability of the proposed material for lining or protection.

The equipment structure shall provide for a secure fastening of the suspended access systems (protective cages, gondolas, etc.) in order to ensure the possibility of concurrent inspection and maintenance work on the absorber in parts not accessible from the outside on gangways, if such inaccessible parts shall exist. The absorber sheathing shall be insulated within the meaning of requirement 4.3.2.10.

Absorber magazine (for limestone/gypsum system)

The absorber magazine, i.e. the lower part of the absorber, shall have a sufficient residence time to allow the dissolution of calcium carbonate, the oxidation of calcium sulfite and the formation of calcium sulfate crystals.

Oversaturation of the recirculating suspension in the absorber must be prevented.

A sufficient number of aerators or propeller atomizers and mixers shall ensure the uniform distribution of the components and solids in the suspension and oxygen input into the reaction throughout the operation time.

The aerators/propeller atomizers shall be fully resistant to the environment in the absorber and shall be made of abrasion and corrosion resistant material.

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The injection holes for oxidizing air must be sufficiently dimensioned to prevent clogging.

The load-bearing structures of the absorber's internal fittings shall be sufficiently dimensioned and protected with respect to the required service life.

The design of the absorber must be such as to avoid damage by high temperature or flooding and to prevent material sticking.

The CONTRACTOR shall provide information on how to restart after an emergency shutdown.

The absorber magazine shall be positioned above ground level so that its contents can be completely emptied.

Droplet separator

Droplets carried by the flue gas stream shall be sufficiently removed by the droplet separator behind the absorption section. The maximum permissible droplet drift rate in the flue gas from the desulphurization stack is 50 mg/Nm³ R in all operating modes. The droplet separator shall be able to operate at least 12,000 hours before the pressure drop reaches the maximum value. An inspection manhole allowing inspection of the droplet separator condition shall be considered.

The droplet separator shall be of a proven type. The material used will be of reduced flammability. The segments shall have sufficient thickness and adequate strength to prevent damage during operation and manual cleaning during comprehensive repairs.

The droplet separator must be minimally two-stage (coarse and fine). Each stage must be equipped with a remote-controlled washing device on both sides. Checking its proper function must be enabled from the outside.

The droplet separators shall be constantly rinsed by process water.

Rinsing nozzles in droplet separator shall be designed to prevent clogging. Pipes and nozzles shall be constructed of durable material.

The droplet separator must be accessible from all sides without additional scaffolding for inspection during short stops.

During the planned shutdown, it is permissible to carry out manual cleaning of the droplet separator with water from the process water distribution system without using water pressure devices.

Flue gas ducts

The works on the flue gas ducts modification shall be carried out with the plant in operation in a period outside the heating season, the operation of boilers K4 and K5 is presumed (separate chimney inputs). For the flue gas ducts works, it shall be necessary to blind the inlets of the flue gas ducts of boilers K6 – K10 into the stack first. The blinding shall be carried out at the existing flange of the flue gas duct. Before the blinding, the flue gas duct shall be structurally secured (supported) in order to prevent the fall or collapse of its structure during the works execution. The detailed method of the blinding, flue gas duct modification and its reconnection to the stack shall be laid out in the DOCUMENTATION FOR EXECUTION OF THE PROJECT. The period in which the operation of the plant is limited to only two boilers (K4 and K5) shall not exceed 30 days and shall be stated by the CONTRACTOR in the schedule of works.

The flue gas duct connection design must meet the corrosion protection requirements (minimum length of shut down parts of the flue ducts, sealing by air).

Include suitable corrosion protection of the inner surface in the flue gas duct segments exposed to corrosive environment.

Thermal expansion of flue gas ducts must be allowed, but it is desirable that the number of flue gas duct compensators is as small as possible. If possible, the necessity of lateral compensation must be eliminated.

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Flue gas condensate must return to the desulfurization process.

The flue gas ducts shall be designed for a maximum flue gas speed of 20 m/s.

The flue gas ducts shall be designed with a minimum wall thickness of 6 mm.

Internal reinforcement must not be used. If internal lining is used, the inner surfaces must be suitably adapted for its application. The external reinforcements and construction design of the flue duct corners shall be such as to prevent cracks in the lining.

Within the scope of WORK, the CONTRACTOR shall propose protection against corrosion for both raw and treated flue gas ducts.

For closures and compensators, the CONTRACTOR shall provide information including the manufacturer's name, relevant technical data, the overall composition and a construction drawing.

The CONTRACTOR shall specify in the design the construction material for closures, frames, seals, etc. Only such closures and compensators with verified use in desulfurization operation shall be supplied. In the event of equipment repair it must be possible to mechanically secure the inlet and outlet closures in the closed position.

The elevation and position of the flue gas duct shall be designed with respect to the passive protection of the booster fan from flooding.

The stack shall be designed in accordance with the dispersion study (see Amendment D02).

Flue gas duct flaps

All flaps (of flue gas ducts) must be suitable for operation and use on flue gas duct with regard to the anticipated flue gas composition.

Shut-off flaps in the flue gas ducts (besides the existing flaps before and behind the fabric filters) shall be sealed by heated compressed air where necessary. The following configuration may be used for the closures:

- two blowers, each with an output of 100%, for one closure,
- two blowers (one in operation and one backup), each with a double power output for two closures, if this solution is acceptable from a process and safety point of view.

The flap seal can also be designed also by using air from PURCHASER'S air distribution system.

Sealing air blowers and associated fittings shall be controlled from the boiler control systems.

Fabric filter

The fabric filter shall be supplied with at least four filter chambers. Each chamber must be capable of separate shut down.

The filtration area shall be designed for flue gas quantity corresponding to all boiler operating points. In case of a failure (deactivation) of one chambers from operation, the remaining chambers (7 chambers) shall handle flue gas flow rate of up to 170,000 Nm³/h.

The difference between the inlet and outlet pressure shall be measured on the fabric filter, and the captured fly ash shall be shaken off from the hoses when the prescribed value is reached.

The shake off shall be automatic and shall be performed by a pulse of compressed air.

From the chutes, fly ash shall be transported by existing pneumatic transport to the existing dry ash silos of the individual boilers. The fabric filter shall be insulated and at least the chutes and the walls shall be heated so that the dew point of the flue gas is not reached.

At the filter flue gas outlet, the measurement of TZL concentration in flue gas shall be installed so as to immediately detect possible failures of the filter hoses. This measurement and signaling must be directed to the boiler control systems and concurrently it will serve as the dry stack emission measurement.

The delivery of the fabric filter must also include upgrading of the inlet and outlet flaps of the filters.

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The fabric of the filter must meet the technical parameters for use in wet desulfurization technology.

4.3.2.3 VESSELS, MAGAZINES, EXCHANGERS

The equipment must be configured to allow easy operation and maintenance using common tools and devices for:

- Access for internal inspections, repairs and cleaning (hatchways, inspection holes, internal ladders).
- External access (optional service platforms, ladders, etc.).
- Installation, lifting, disassembly, transport.
- Storage structures and anchoring and the possibility of replacing possible internal filling and repair of the installation.
- Insulation attachments.
- Safety (safety valves, silo explosion vents, etc.).
- Remote and local measurement and regulation (including local instruments, gauges).
- Overflows.
- Venting and draining.
- Grounding.
- Testing.
- Marking.
- Small orifice reinforcement.
- Installation of construction inserts.
- Disassembly of lids and heads (mounting arms, hinges, etc.).
- Anchoring (bolts, nuts, concrete foundation anchoring).
- Coating.
- Protection against corrosion.
- Cleaning.

This equipment must further meet the following requirements:

- Non-pressurized containers and magazines for hazardous media must be designed for minimum overpressure of 6 bar.
- All these devices must be equipped with the prescribed safety features (safety valves, explosion vent tear membranes, etc.).
- All these devices must allow emptying and be grounded.
- Ventilation of vessels through detonation arrestors or similar equipment must be made and installed so that water or condensed media cannot freeze in this equipment.
- Bulk material magazines must be equipped with aeration equipment and filter equipment with automatic regeneration to ensure that TZL concentration is not higher than 30 mg/m³ in the air emitted from the magazine.

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The CONTRACTOR shall be responsible for the correct function of the filling, aeration, material removal and filtration equipment of the existing lime and limestone silos.

- Bulk material magazines, where there is a possibility that the dew point of the gases inside the vessel is reached as a result of cooling, must be insulated and heated.
- The drain holes closures of containers storing hazardous media must be doubled.
- All tanks and magazines must be equipped with inspection hole hatch doors with own rotating support structure. This applies to all hatches and inspection holes, not only on tanks and magazines.
- Suspension tanks must be equipped with flushing nozzles placed at the mixer locations.
- The usable volume of tanks, sumps and the sizing of the process technology must meet the requirements for the safe operation of the respective equipment and the requirements for handling emergency operating conditions.

4.3.2.4 FANS

The fans shall be designed and shall include:

- Sound and thermal insulation.
- Components for flexible mounting.
- The flow rate and the total fan pressure must meet the specified conditions with a reserve, the ID fan and the oxidizing air blowers must have a reserve minimum 5% above the nominal value.
- Fans included in the flue gas line or otherwise influencing the technological process must be equipped with remote power control via frequency converters.
- The operating range shall be consistent with optimal efficiency.
- Fans are required to be air-cooled, complete with standard accessories.
- The fan design must allow easy maintenance and control by the operator.
- The fan is required to operate with minimal vibrations and noise throughout the control range. If necessary, the fans shall be equipped with ventilated sound dampening hoods.
- The fan motors must be designed so that the motor power reserve is at least 15% of the power required for the fan operating point (s), at the same time it must be able to cover the reserves in the flow rate and delivery elevation.
- The final design of each fan, blower, and compressed air source of a process device is subject to PURCHASER'S approval, who will also assess the submitted documents for machine dimensioning and design calculation.

Requirements related to diagnostics:

- All fans shall be equipped with measuring devices for bearing temperatures and motor winding temperatures, signaling of control elements position and signaling of important machine operating parameters such as pressure in the oil system, etc.
- All rotating components, in particular motors, fans, compressors, gearboxes, etc. with a power output of more than 25 kW, shall be equipped with vibration monitoring.

These values shall be introduced into the control system in accordance with chapter 6.2.

4.3.2.5 PUMPS

Pumps shall be designed and shall include:

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- Process pumps shall have appropriate mechanical seals compatible with process media and operating conditions, sealing materials shall be chosen so that more durable material shall always be used if more options are available.
- The operating point of the pump within the control range of the technology must not be near an unstable part of the characteristic (surge area).
- A standard power reserve of minimum 10% above the power corresponding to the pump design point (s) is required.
- Pump motors must be designed so that the engine power has a reserve of at least 15% of the power required for the pump operating point (s).
- The design shall reflect the influence of the changing resistance characteristic of the process technology due to long-term operation.
- The pump design point shall correspond to the best efficiency range.
- Installed backup or replacement pumps shall be designed to avoid a reduction in the performance or efficiency of the relevant process section in all operating modes, unless otherwise specified.
- In pumps whose failure would result in operation limitations or an equipment shutdown, at least one pump must be installed as a stand-by capable to replace the pump in operation. This does not apply to recirculation pumps.
- Pumps where a flow rate restriction could result in an impermissible overheating of the pumped liquid must be equipped with a minimum bypass.
- Suspension pumps must allow flushing and the penetration of abrasive particles into the seal and sealing surface must be prevented.
- The active and exposed parts of the suspension pumps shall not be rubberized, but shall be made of stainless material that resists the corrosive and abrasive effects of the suspension. Other solutions, such as silicon carbide protection, are allowed in justified cases; the selection must be substantiated by the CONTRACTOR and authorized by the PURCHASER.
- It must be optional which pump will work as backup and which one as operational. This does not apply to recirculation pumps.
- Automatic start of the backup pump is required in the event of a failure, malfunction of the operational pump, or when the flow rate drops below a predetermined value.
- A pressure gauge shall be placed before and after each pump, and where flooding and deaeration of the pumps will be required, this deaeration and flooding shall be automatic.
- Piping next to the pumps shall be equipped with spacer rings so that the pump is easily removable.
- Pump alignment after installation must be documented by a protocol approved by the PURCHASER.
- The pump service life is similar to that of fans. This does not apply to suspension pumps; here minimum operating time of 1 year without changing worn parts is required.
- The suction piping of large circulation pumps must be designed so that the flow velocity profile of the fluid in suction is not shifted to one side (sufficient suction length for stabilizing after bend).
- The pumps must be protected for the event of a discharge shut-off by a safety valve which is not a part of the pump.

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- All pumps must be designed to withstand the pressure generated during operation when the discharge valve is fully closed. The noise level must comply with the requirements specified in this documentation.
- The pumps must withstand maximum possible reverse rotation speed when reverse flow occurs with respect to the delivery height and the flow rate.

The documentation for the design of all pumps as well as the design calculation of all pumps shall be submitted to the PURCHASER and shall be subject for approval in the design stage.

Requirements related to diagnostics:

- All pumps shall be equipped with measurement devices for vibration, bearing temperatures and motor winding temperatures.
- All rotating components, in particular motors, fans, compressors, gearboxes, etc. with a power output of more than 25 kW, shall be equipped with vibration monitoring.

These values shall be introduced into the control system in accordance with chapter 6.2.

4.3.2.6 MIXERS

Mixers shall be used for all sumps and tanks where the suspension is gathered or where media capable of gravity stratification is gathered.

The mixers and their drives shall be equipped with devices preventing overload from a viscosity increase in the mixed media. In the event of such intervention, it is necessary to ensure safe shutdown of the technology i.e. removal of the suspension.

The mixers shall be made of stainless steel (unless the properties of the mixed material exclude this).

The mixer must be capable of stirring the mixed medium even after 12 hours of stopped operation.

The mechanical seal of the pump shall be replaceable from the outside when operating the respective reservoir or tank.

For the service life of the mixers, conditions similar to those for fans apply.

All mixer components shall be equipped with vibration monitoring data transmitted to ŘS in accordance with chapter 6.2.

4.3.2.7 DRIVES

Where not stated otherwise in this Supplement 1 to the CONTRACT, all drives shall be electrical. Their type will be suitable for continuous operation, with the exception of electrical motors for shut-off fittings, which will be designed for short-term operation.

The motors shall be able to start with at least 3 cold starts and 2 hot starts within 1 hour and 7 cold starts and 4 hot starts within 24 hours.

Electrical motors with a power output of more than 25 kW shall be controlled by frequency converters, with the exception of electrical motors of recirculation pumps.

Electrical motors with a power output of more than 50 kW shall be equipped with an operating hour counter.

Electrical motors with a power output greater than 75 kW shall be equipped with a thermal protection in the winding.

Electrical motors controlled by frequency converters shall be equipped for operation with frequency converters (thermal protection in windings, external cooling, electrical insulation of bearings, etc.).

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Reliability and the number of electrical motor operation hours without maintenance must be consistent with the maintenance and inspection periods of the driven machinery.

Other types of drives (e.g. pneumatic) are only allowed in justified cases; the selection must be justified by the CONTRACTOR and must be approved by the PURCHASER.

4.3.2.8 PIPES, FITTINGS AND ACCESSORIES

Requirements and standards

Similar rules that apply to machinery and equipment also apply for pipes, fittings and accessories. The design of the piping, connection dimensions and the adjustment of the flange sealing surfaces must comply with the Czech standards (ČSN 13 0020, ČSN EN 13480-1 ÷ 6, ČSN 130072 and following).

Pipes and flanges requiring for service life and correct operation a defined position shall be provided with a lock (position definition).

Layout

The layout of the piping must be in accordance with the general rules and best engineering practice and experience of the CONTRACTOR. Easy handling and maintenance must be respected. Pipes must be with minimal vibrations. The forces and moments transmitted by piping to the equipment and machinery connections must not exceed the forces and moments allowed by the equipment supplier. Pipes must be labeled according to the media used - paint color, stripe colors, labels and arrows).

For nominal pipe diameters see ČSN EN ISO 6708 (DN 15, 25, 40, 50, 80, 100, 150, 200, etc.).

Pipes and accessories

Pipes including accessories must meet all strength and dimensional requirements and conditions for the construction of all pipelines and routes considered.

Pipeline supply must include all pipelines within the WORK scope within the specified supply boundaries. Pipelines shall be subjected to the prescribed tests (pressure, sealing, etc., and supported by certificates) after mechanical completion.

Piping supports and hinges must be made according to ČSN. Hinges and supports for cold distribution piping must have thermal insulating inserts.

All pipelines, including equipment, must be conductively interconnected throughout the pipe lengths and properly grounded.

Pipes must be installed entirely in a gradient and the content must be releasable; piping must be provided with air venting and release valves.

Piping systems of all media must be fitted with stop valves to allow maintenance work during operation.

The suspension transport pipeline shall be designed for a speed of 1.5 - 3 m/s. This pipe must be flushable and stable accessories must be installed to enable flushing.

The pipes must be designed for the least favorable conditions they may be exposed to. Consideration must also be given to the conditions arising when commissioning the equipment and its cleaning.

Pipes subject to vacuum must be designed for complete vacuum.

Piping systems for hot water, fire water and condensate must be subjected to an analysis of pressure surge risk prior to installation.

The piping for the distribution of dry compressed air shall be made of stainless steel.

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Appropriate particle separators or self-cleaning permanent particle filters must be installed in the intake manifold for all pumps, separators or filters and must be separated by shut-off fittings with a bypass.

Piping routes must be designed to avoid any pressure shocks in pipes.

Connection seals disassembled during tests (pressure test, etc.) must be replaced after the test.

The use of threaded connections for process pipelines is prohibited.

Compressor discharge pipes must include a return and shut-off fitting for each compressor.

The CONTRACTOR shall ensure that all piping is capable of continuous and reliable operation. Conditions in piping leading to its failure or shortening of its service life are inadmissible.

The following shall be considered as inadmissible:

- Leaks of all kinds on piping, pipe fittings, fittings, pumps and compensators.
- Detachment of piping from support, hinge or guide.
- Lifting of the pipeline over support.
- Pipeline misalignment from support.
- Floating pipeline routes without fixed points.
- Pipe vibration induced by the dynamic effect of flowing media.
- Freezing of pipes, tanks, venting and drainage fittings.
- Inability to completely drain and de-aerate the piping systems.
- Water ingress into the insulation.
- Device corrosion.
- Pipe aeration or evaporation of water in pipes due to low pressure.
- Water column separation or other water shock impacts on piping in the event of a pump failure or hydrodynamic shock from a changing fitting position.

Piping routes shall be designed with regard to thermal expansion of the pipeline so that the permissible forces and moments on the individual devices are not exceeded

Fittings

All fittings necessary for the proposed level of automated operation shall be equipped with servo-drives.

New equipment shall be fitted with such number of fittings so as to ensure safe separation from the existing installed equipment. The fittings shall be accessible for both inspection and repair.

Fitting actuation must not cause pressure surges in the pipeline.

Manual shut-off fittings from DN 150 and larger must be fitted with gearboxes.

For media with a requirement to prevent leakage to the environment, fittings using rising spindle shall not be used. If a fitting with a rising spindle is used, then use a fitting with bellows.

For water and condensate, ball valves or possibly flaps shall be used.

All control fittings shall be 100% backed up. If a control fitting fails, it will be possible to repair and replace it without interrupting the operation of the process technology.

The design base for the dimensioning of all control fittings, as well as the dimensioning calculations for all control valves, shall be submitted to the PURCHASER in the design phase.

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Other

All the process technological elements (valves, servo drives, sensors) shall be permanently accessible, also from any potential service platforms.

4.3.2.9 CONSTRUCTION MATERIAL AND INDOOR ANTI-CORROSION PROTECTION

General requirements and standards

The quality of the material must meet the requirements of the mechanical design according to the design calculation parameters and at the same time must be fully compatible with the relevant media, operating parameters and other conditions influencing material selection. The corrosion-resistant, abrasion-resistant, or possibly refractory and heat stable material must be optimum and selected according to the latest standards and experience.

The CONTRACTOR shall be responsible for the selection of the material, but the quality of the material for pressure vessels, pipes, etc. must also meet the requirements of the relevant Czech standards.

The CONTRACTOR shall design and implement access to surfaces with corrosion-resistant treatment to inspect the status of the anticorrosive treatment.

In the design, the CONTRACTOR shall specify the quality of the material and the standards for each equipment item, pipe system, etc., and must justify the material selection (comparison of suitable alternatives) for the following items:

- flue gas duct lining material;
- absorber lining (protection) material;
- unlined metallic materials in flue gas ducts and absorbers;
- flue gas duct drainage system;
- suspension pumps;
- piping and fittings for suspension.

The CONTRACTOR shall specify the list of materials used by quoting the standard, composition and main characteristics as well as the Czech equivalents.

Corrosion allowances

The corrosion allowance shall be determined by CONTRACTOR based on long-term experience from the operation of existing equipment.

The corrosion allowances shall be specified for each material group used for equipment, piping systems, etc.

Internal corrosion protection

Where necessary, internal corrosion protection, based on the experience of the CONTRACTOR, the special nature of construction and character of the equipment, as verified by long-term operation, shall be used. As with material and corrosion allowance, internal corrosion protection and its application are fully the responsibility of the CONTRACTOR and under its warranties.

In the DESIGN, anticorrosive protection must be stated for each device where it is used by the CONTRACTOR. This will include the technological process of removing corrosion products from affected existing surfaces.

The CONTRACTOR shall specify the information on the use, reliability and suitability of the proposed corrosion protection, referring to the equipment for which it is suitable for long-term operation, the name of the manufacturer and its experience. Also stated will be the specifications for required repairs, repair procedures, their frequency, time requirements and service life.

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In the design, the CONTRACTOR shall submit a specification sheet with qualitative and quantitative data on the chemical composition and physical and mechanical properties of the corrosion protection agent to be used.

Basic requirements for equipment surfaces to be provided with lining:

- Construction inserts must be excluded except when necessary for process technology reasons
- Dimensioning of wall thickness and number of external reinforcements shall ensure that deformations due to operating conditions and necessary inspection walks are not greater than 5 mm
- The diameter of the throats must be minimum 80 mm
- All areas to be lined must be visible and easily accessible
- An even and smooth surface without sharp corners and edges is an indispensable condition for the corrosion protection of the entire surface. The surface of the components must not have dents such as from welding, pores and defects. Area of grinding when removing the defect must be sufficiently large.

4.3.2.10 INSULATION

These requirements apply to the thermal insulation of pipes, tanks, fittings and other assembled parts.

They represent the basic description of the thermal insulation and do not relieve the CONTRACTOR of its obligation to install faultless thermal insulation according to the state of the art, even if no details are provided hereinbelow.

All components whose operating surface temperature exceeds 50 °C shall be fitted with a thermal insulation layer (or other safety measure to prevent injury from touching hot surfaces). All operating conditions and all climatic conditions must be taken into account.

Excluded from this are the technically conditioned thermal bridges and parts of installations where not negatively impacting other components or not subject to any safety regulations or economic aspects (flue gas scrubber etc.). Cold and warm bridges are to be avoided.

Insulation surface temperature shall be maximum 50 °C; if this could not be achieved in unique cases, these surfaces must be protected from contact with persons.

Insulation of hot water pipelines and tanks should be dimensioned in a way that heat losses by radiation, regarding energy efficiency and economy, are not exceeded. Insulation of pipes, absorber and tanks with cold water should safely prevent moisture condensation when the lowest temperatures are considered.

Plastic pipes need not be insulated to prevent moisture condensation unless the insulation is required for energy efficiency economy.

Only perfect insulating materials with known thermal insulating properties and guaranteeing compliance with the above criteria shall be used.

The insulation material must be dry before and during installation. It must not have negative or destructive effect on the insulated piece of equipment, e.g. due to unacceptably strong corrosion, moisture excretion, electrolytic corrosion, and similar.

All insulated surfaces must be clean and dry prior to the installation of the insulating material. Fundamentally, wet or icy surfaces cannot be insulated.

Insulation materials must not burn or sinter at the occurring temperatures. Thermal insulation must not be detached from the insulated part of the equipment, it shall not sag in horizontal position and

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settle in vertical position. The thermal expansion of the insulated part of equipment is to be compensated, if necessary, by means of telescopically arranged casing rings, or by a correspondingly larger prestressing. By prestressing, the occurrence of hollow spaces between the individual insulation sections at full elongation must be avoided.

The insulating material must be completely free of impurities and iron particles, must not in any way compromise the material of the insulated item and must have the following characteristics:

- Chemically inert, sulfur-free, asbestos-free, free of alkaline water-soluble constituents, resistant to rotting, hot water and water vapor, even when alkaline, and absolutely non-flammable.
- The best approach is to install the insulation in two or more layers to the required total thickness. The joints of the individual layers of insulation should not be stacked to ensure that the thermal bridges in the joints are interrupted. Insulation should always be protected from weather impacts.
- When the insulation thickness is greater than 120 mm, the insulation is installed in at least two layers with layers overlapping in the joints.
- Insulation and sheathing should be installed so as to allow piping dilatation without damage. Pairs of flanges and compensators shall be fitted with removable lids.

Insulation material for stainless steel piping must not contain chlorides (the material must be certified for stainless steel pipe insulation). Stainless steel surfaces can only be cleaned by stainless steel brushes. Impurities must not be removed using solvents or detergents containing chlorides.

Fittings of all sizes, flanges and places requiring access for operation and maintenance shall be fitted with removable insulating sleeves.

Supports and hinges shall be fitted with insulating inserts, especially for insulation preventing cold loss.

For vertical piping, the insulation shall be secured by retaining and binding wire to ensure tight fitting to the pipe. To prevent the insulation mats from settling or sliding off, their weight is to be borne by supporting rings.

It is important that the surface of the pipeline and equipment on which the insulation is installed is properly treated. Surfaces consisting of unfinished steel must be stripped of dirt and rust by grinding. Grease can be removed with detergents or solvents.

There must be sufficient free space between the insulated pipes (for installation and adjustment of the insulation).

Taps, valves and sliders should be positioned so that they can be operated without standing on the insulated pipeline.

The valve spindles should not be installed upwards to prevent water from entering the insulating material.

For venting, drainage and exhaust pipes in the vicinity of platforms, stairs and service platforms, protective thermal insulation is required to protect operating personnel.

When the equipment noise level exceeds 85 dB (A) or the limits prescribed by sanitary regulations for the given operation, appropriate sound insulation shall be installed on the equipment.

Heat insulation of flue gas ducts and heating, ventilation and air-conditioning systems performs the function of fire protection, sound protection and protection against condensation. Insulation of air-conditioning pipelines is attached to the outside of the pipeline by means of an adhesive or welded pins made of steel or aluminum, or the pipe insulation is fastened with straps. For aesthetic reasons, the joints of insulation boards or mats are covered by adhesive aluminum strips. All joints

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should be tight and sealed with adhesive tape. If necessary, cladding shall be mounted on the insulation. At the same time, the optimum performance parameters of the insulated equipment must be maintained.

4.3.2.11 SHEATHING, SUPPORT STRUCTURES

The insulation sheathing shall consist of a smooth metal sheet (AlMn semi-hard, DIN 1725), purely circular in the form of a sheath and mounted on spacers. It is installed by passivated or stainless steel screws in the longitudinal seams. The distance between the screws must not be greater than 200 mm.

For horizontal pipelines, longitudinal seams are made on the bottom side. Circular seams of individual metal sheet contacts shall be hemmed.

The offset of the longitudinal and circular seams shall be dimensioned in such a way that no water droplets or leakage water can penetrate and moisture penetration is fully excluded. In addition, the offset on the ring seams should be adjusted so that the sheet metal can withstand the heat expansion and pipeline dislocation without damage.

For outdoor sheathing, the bottom should be configured to allow dripping.

Plastic may also be used, if necessary, for sheathing, provided its parameters match the conditions where used.

No water droplets or splashes should penetrate into the sealing through sheathing joints.

To attach the sheathing, stainless steel screws for sheet metal, min. 4.8 x 13 mm, quality A2 shall be used. The distance between the screws must not exceed 200 mm.

Sheathing holes for hinges, supports, etc. must be hemmed.

Type of sheathing:

- indoor: aluminum sheet (smooth)
- outdoor: painted aluminum sheet.

The following sheet thickness shall be used:

- Sheet 0.8 mm for sheathing up to DN 100.
- Sheet 1.0 mm for sheathing above DN 100 and for flange cabinets and valve covers.

Support structures, spacers

When using insulating mats, spacers are fundamentally required from DN 100 inclusive, or possibly from insulation thickness 60 mm inclusive, with spacing of not less than 950 mm to ensure a uniform insulating thickness and circular shape of the sheathing.

Vertical standing vessels and piping shall be fitted with clamping rings with spacing of maximum 2.0 m to prevent settlement of the thermal insulation. The heat insulation can also be installed from the pipe holders; then it is to be placed on "S" hooks at an appropriate spacing and provided with sufficient sliding seams.

The outer and inner clamping rings of the spacers are generally fastened by means of screws. Only screw connections from M6, inclusive are permitted. Binding wire, etc., must not be used.

Care must be taken to ensure that these spacing structures do not form thermal bridges and do not cause additional thermal losses. At a 400 °C pipe temperature, principally discontinuous flat steel spacer inserts are used. Joints are separated by IT inserts. The part which comes into contact with the pipe is made of heat-resistant steel. Also the clamps attached to the tube in this temperature range.

Welding of any kind is fundamentally forbidden on insulating components!

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However, if it is unavoidable to weld the supporting structures to the components, it may be done only by the CONTRACTOR upon an agreement with the PURCHASER.

When installing insulation, the principles of work safety and environmental protection must be observed.

4.3.2.12 SURAFCE TREATMENT AND COATING

General

Corrosion protection shall be applied to all carbon steel components included within the scope of CONTRACTOR'S delivery and shall consist of a primer, interlayer and top coat. The complete primer, interlayer and top coat is carried out at the manufacturer's plant. Standard machines and equipment such as pumps, fittings, etc. shall also be delivered with a surface finish. When installing and commissioning, appropriate protection measures must be taken (only repairs of damaged surfaces shall be carried out). The coatings must withstand the level aggressiveness of the given environment and service life requirements of the equipment.

It is not allowed to use environmentally harmful materials in coating.

The design of the coating systems shall be governed in particular by ČSN EN ISO 9223.

The required coating life is 10 years, and this requirement shall drive the selection of paint systems, to be documented by paint system vendor certificates.

The paint system must be specified by the CONTRACTOR in advance in the design and must be approved by the PURCHASER before application.

Color solution for the machinery and equipment paintwork shall be subject to PURCHASER'S approval and the pipe color design shall conform to ČSN 13 0072 and shall also be subject to PURCHASER'S approval.

When PP, PE, galvanized steel, stainless steel and insulated pipes are used, the color paint shall be replaced by colored stripes.

The coating of all surfaces to be protected must comply at least with the following structure:

Clean sand blasted metal	min. Sa 2.5	
	Minimum thickness of dry film [μm]	Mean thickness of dry film [μm] [μm]
First primer	30	60
Second primer	30	60
Interlayer	30	60
Top coat	30	60
Total	120	240

The minimum thicknesses of the layers (dry film thickness) must not be less than the set value at any single location.

The color shade of standard equipment such as valves, tools, etc. may be applied according to the CONTRACTOR'S standard; regarding other equipment (pumps, motors, gear motors, mixers, compressors, etc.) the CONTRACTOR shall conform to the CUSTOMER'S color concept. Base coats, interlayers and top coats must be compatible and overcoatable.

On insulated flue gas ducts only two heat-resistant coatings shall be applied, each with a minimum thickness of 30 μm. Also, on the other devices on the flue gas ducts, at least two heat-resistant base coats shall be applied, each with a minimum thickness of 30 μm.

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The CONTRACTOR is responsible for the professional selection and flawless quality of the coating system.

Corrosion protection work must be carried out with great care and expertise.

Preliminary surface treatment for primer

Surfaces must be thoroughly pre-treated and abraded by sandblasting.

Sandblasting according to SIS 05 59 00 (Svensk Standard) SIS/1988, (ISO 8501-1: 1988), quality class Sa 2.5 (performed at the manufacturing plant).

All splashes after welding, slag after welding or burning, chips, etc. must be completely removed. Also, all steel rolling errors (duplication) must also be eliminated by grinding.

Welds must be welded impermeably. Seam welds are not permitted. Sharp edges must be chamfered.

Priming

The first primer must be applied as soon as possible while preventing moisture access, at least within 6 hours, at the latest on the same day as sandblasting.

Both primers shall be applied in different color shades.

Both first and second primary coats must be based on unmixed two-component resin (without additional fillers).

If the coating is exposed to temperatures above 80 °C, a zinc-silicate coating must be used for the priming.

Interlayer and top coat (overcoat)

As an interlayer, an iron/mica based paint based on a two component resin must be used.

For top coats in indoor or outdoor areas, binders based on two component polyurethane are to be used.

On-site repair work

Damaged primer, interlayer and potentially the topcoat must be repaired on-site as follows:

Carefully grind the transitions and completely remove rust.

Apply primer with min. 60 µm (2 coats).

Apply top coat min. 60 µm (2 coats).

Interlayers and top coats should be applied in accordance with the quality of the original paint.

Weather conditions during corrosion protection work

During the corrosion protection work and during the corresponding drying time of the interlayer and top coat, minimum 4 °C difference between surface temperature and air dew point is required. The CONTRACTOR is obliged to comply with this requirement.

4.3.2.13 WINTER MEASURES

The WORK and its individual SOs/IOs/PSs must be designed and constructed in such manner that no failures caused by freezing shall occur in the winter period. These include, but are not limited to heating and suitable layout of condensate drainage, welded-on drainage and venting components, air release/intake fittings, condensate drains from safety valves, etc.

When using electrical heating cables, self-regulating cables are preferred.

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4.3.3 SPECIFIC REQUIREMENT FOR THE DESIGN OF INDIVIDUAL PROCESS PSs/DPSs

The specific requirements for the design of the individual technological units are provided in Amendment D01.

4.3.4 ELECTRICAL PART

The desulfurization process technology shall be powered from the new 6kV substation. This substation shall have 2 supply connections from the existing reserve switchbays of the R6KYII substation. Within the work scope, these switchbays shall be adapted to power the new 6kV switchboard and shall be equipped with short-circuit current reduction reactors.

Recirculation pumps and the booster fan supplied within the work scope shall be powered from the modified reserve switchbays of the existing 6kV substations R6KTI and R6KYI.

The equipment supplemented to the existing operations of the Limestone Handling and the Mixing Center/Agglomeration (switchboards) shall be added to the R04KYI (00BFA) 66A/B substation (behind limestone silos) at voltage 0.4 kV. The existing substation is assumed to have sufficient space and power reserves to power the newly installed equipment. If this reserve is not sufficient, a new switchboard shall be provided by the CONTRACTOR.

The current layout of electrical equipment is shown on single-ended diagrams (see Amendment D05).

The power rating of individual devices shall be determined by the CONTRACTOR according to the technology used.

4.3.4.1 BASIC REQUIREMENTS

All electrical equipment shall be power supplied from the 0.4kV or 6kV system.

Equipment Reliability

The electrical equipment must be designed so that the temporary loss of voltage of its own consumption, short-term loss of control voltage 24 V, 230 V, circuit breaker failure, measurement/transducer failure do not cause the new desulfurization technology to shut down. These outages shall be signaled by the control system.

Equipment safety

The electrical equipment must be designed so that the process equipment can be safely shut down with a permanent loss of power for own consumption.

External influences

The protocol on determination of external influences shall be prepared by the contractor in accordance with ČSN 33 2000-5-51 ed.3.

Distribution systems

NN system, nominal voltage of own consumption substations:

3PE AC 50Hz 6kV/IT

NN system:

3PEN AC 50Hz 400/230 V/TN-C, TN-C-S

3NPE AC 50Hz 400/230 V/TN-S

2-220V DC / IT

Secondary circuits of instrument current transformers: 5 (1) A / 50 Hz.

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ASŘTP (Automated System of Technological Process Control) power supply

1NPE AC 50Hz 230 V/TN-S

Protection against electric shock

Protection against dangerous contact with parts not under voltage shall be carried out in accordance with ČSN EN 61140 ed.3, ČSN EN 61936, ČSN EN 50522 and ČSN 332000-4-41 ed.3.

System 3 AC 50Hz 6kV/IT:

Measures according to ČSN EN 61936-1 art. 7, 8 and 9.

System 3PEN AC 50Hz 400/230 V/TN-C, TN-C-S:

Automatic disconnection from the source according to ČSN 33 2000-4-41 ed.3, article 411.

System 3NPE AC 50Hz 400/230 V/TN-S:

Automatic disconnection from the source according to ČSN 33 2000-4-41 ed.3, article 411.

System 1NPE AC 50Hz 230V/TN-S:

Automatic disconnection from the source according to ČSN 33 2000-4-41 ed.3, article 411.

System 2-220V / IT:

Automatic disconnection from the source according to ČSN 33 2000-4-41 ed.3, article 411.

Electromagnetic Compatibility (EMC)

EMC shall be designed in accordance with valid ČSN, EN standards. Limiting interference in the surroundings shall be ensured by adhering to the equipment manufacturer's recommended installation, using shielded power cables to motors powered by converter, separation of control and power cables using spacers, partitions or separate routes, with restriction on parallel position of power and signal cables. Adverse back effects of frequency converters on the power supply system shall be prevented by using input filters.

Protection of electrical devices against overcurrents in NN networks

The design shall follow ČSN 33 2000-4-43 ed.2 so that the individual elements of the equipment are protected against exceeding the limit values for the protected equipment operation. This protection shall be provided by protective elements (circuit breakers, fuses, thermal relays) protecting directly the electrical equipment when the set limit is exceeded.

Protection of electrical devices against overcurrents in VN networks

The design shall follow ČSN 33 3051 so that the individual elements of the equipment are protected against exceeding the limit values of the protected equipment operation. This protection shall be provided by electrical protective elements, which in conjunction with the respective switches shall protect directly the electrical equipment when the set limit is exceeded.

Protection of electrical devices against overcurrents in VN systems

Protection against electric shock shall be carried out in accordance with applicable regulations and standards, in particular ČSN 33 2000-4-41 ed. 3, ČSN EN 61140 ed. 2, ČSN EN 50 522, ČSN EN 61 936-1 and all related standards.

Voltage sags, automatic backup and selectivity

The voltage sags shall comply with the requirements of ČSN 34 1610 and ČSN 38 1120. In the event of a voltage failure on one of the connections for the new desulfurization vn switchboard, the automatic backups shall be designed so that the second connection is not overloaded and then also switched off. The type of automatic backups shall be unified with the existing own power

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consumption switchboards. The protections on output switches of the new desulfurization vn switchboard shall be fully selective with protection on the supply switchbays as well as the output switches of the upstream substations. In case of a malfunction, only the affected part shall be turned off.

Level of supply importance

Appliances shall be divided into three categories according to the valid standards ČSN 34 1610 and ČSN 38 1120 into three categories.

The main switchboard 6kV and main NN switchboards provide power supply No. 2. These switchboards have two independent inputs, automatic backup and the load on the VN/NN transformers shall be maximum of 100% of their nominal output even in an outage and while taking over the load of the backed up transformer. The switchboards will be single-system.

Secondary switchboards power supplied by two independent connections are included in power supply No. 2.

The switchboards with one connection are included in power supply No 3.

Reactive power compensation

Reactive power compensation shall not be implemented.

4.3.4.2 DESCRIPTION OF CONNECTIONS

The new 6kV desulfurization switchboard shall be connected to two existing 6kV substation backup switchbays, so as the circulating pumps and a combustion air booster fan. The supply switchbays to the new 6kV switchboard shall be implemented with mutual automatic backup. Appliances supplemented to the limestone suspension production technology shall be connected to the existing nn substation 00BFA.

Within the scope of the work two VN/LN transformers shall be supplied, connected to the new vn switchboard. One of the transformers shall power the newly supplied process technology, the second transformer shall be primarily used to power the wiring system in buildings. Both transformers shall have the same parameters so that, in the event of a process transformer failure, the transformer, which is primarily intended for powering the building wiring, shall be able to supply the desulfurization process technology.

In the event of power loss, replacement power sources shall be installed within the work scope. A diesel generator to power the flue gas cooling pump and suspension mixer shall be supplied and connected. The power output of the diesel generator shall be determined by the contractor based on the requirements of the supplied technology.

Appliances supplemented to the limestone suspension technology shall be connected to the existing 00BFA switchboard if this switchboard has sufficient space and power reserves. Otherwise, a new nn switchboard shall be supplied by the contractor within the WORK scope.

4.3.4.3 LAYOUT SOLUTION

The said 6kV substations are located in the HVB building (+0.20m), room 1.27. The 0.4kV R04KYI substation is also in the HVB building (+0.20 m), room 1.45.

All new VN and main NN switchboards, VN/NN transformers, motor switchboards, building wiring switchboards, UPS and central emergency lighting unit shall be located in the newly constructed SO03 substation building.

The diesel generator shall be supplied and installed as a compact unit in a container, the container shall be located north of the SO03 substation.

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4.3.4.4 6KV SUBSTATIONS

The existing switchbays of 6kV substations R6KYI, R6KYII are of the vault-type design. The R6KTI substation is of the cabinet design and is equipped with flash protection

The reconfigured 6 kV switchboard switchbays shall be implemented with a complete design of connections to the control system. Both switchbays shall be monitored and controlled by ŘS MicroSCADA as used in TKY.

The newly supplied switchboards shall be of a cabinet design, all the outputs shall be equipped by vacuum switches with slide-out carts.

The switchboards must comply with ČSN EN 62271-200 ed.2, it must have the prescribed protection from external environment and electrical equipment according to ČSN 33 2000-1 ed. 2 Low voltage electrical installations - Part 1: Basic principles, assessment of basic characteristics, definitions, definitions ČSN 33 2000-5-51 ed.3: Electrical equipment - Selection and erection of electrical equipment – Common rules, and related standards.

The switchboards shall be adapted for cable connection from the bottom.

The switchboards shall be equipped with the necessary PTP for measurement and protection.

The individual switchboard outputs shall be equipped with terminals for protection, measurement, control, diagnostics and monitoring. The terminals shall be connected via a communication line to the existing ŘS.

Flash protection shall be installed in all new 6kV switchbays, full compatibility with the current flash protection system is required.

<i>Parameter</i>	<i>Unit</i>	<i>Value</i>
Nominal voltage	kV	7.2
Busbar material	-	Cu
Switchgear manufactured according to standard	ČSN, IEC	
Circuit breakers:		
– arc quenching type	-	vacuum
– nominal voltage	V	7.2

Instrumentation Current Transformers (PTP)

Current instrumentation current transformers must comply with ČSN EN 61869-2.

PTP parameters such as their ratios, nominal load and other properties must conform to and be compatible with protection and measurement requirements.

PTPs shall comply at least in the following parameters:

<i>Parameter</i>	<i>Value</i>
Nominal voltage	6 kV
Insulation voltage	7.2 kV
Nominal current secondary	5 A
Nominal frequency	50 Hz
Number of cores	2

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Parameter	Value
Core type - Core I - accuracy grade - overcurrent number	0.2 % < 5
Core type - Core II accuracy grade	5 P10
Short circuit current - short time (1 sec) - dynamic	as required as required

4.3.4.5 SWITCHBOARDS 0.4 KV

Switchboards 0.4 kV shall be implemented with a complete link solution to the control system. The modules shall be equipped with the ability to adjust blocking, sending diagnostic data, alarms and timestamp events, and interfaces to control and monitor the switchboards and their accessories.

The switchboards must comply with ČSN EN 62271-200 ed.2, must have the prescribed protection from external environment and electrical equipment according to ČSN 33 2000-1 ed. 2 Low voltage electrical installations - Part 1: Basic principles, assessment of basic characteristics, definitions, definitions ČSN 33 2000-5-51 ed.3: Electrical equipment - Selection and erection of electrical equipment – Common rules, and related standards.

The switchboards shall be adapted for cable connection from the bottom.

Links to the automated technological process control system shall be implemented by type.

The switchboards shall have a minimum 10-percent reserve in the number of each output type, at least one piece of each type.

Additionally, the switchboards shall have a 10% internal space reserve.

4.3.4.6 ELECTRICAL PROTECTIONS

All adjusted 6kV switchboard switchbays and all new 6kV switchboard switchbays shall incorporate new electrical protections.

The protection shall be carried out in accordance with the ČSN 33 3051 standard.

The electrical protection system error signaling shall be connected to the control system.

frequency converters

Frequency converters, if used, shall preferably be from one renowned manufacturer.

Converters powered from the 0.4kV grid shall preferably be in a 6 pulse configuration to eliminate higher harmonics and shall include a filter enabling compliance with ČSN EN 61000-6-2 ed.3 and ČSN EN 61000-6-4 ed.2 to EMC for industrial environments and other relevant applicable standards. It is assumed that the THDI current distortion of frequency converters for NN drives shall be 30% maximum.

The frequency converters must be made in accordance with ČSN EN 61800 (set of standards).

The frequency converters must be capable of continuous operation with nominal parameters when the input voltage fluctuates on the primary side of the frequency converter within range $\pm 10\% U_n$, and shall continue to operate at transient voltage fluctuations - 20% U_n and at input frequency fluctuations between 46 to 53 Hz.

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At motor start or in the event of a backup or in the event of a short-term power outage, the control shall be set so that the starting current from the power supply substation does not exceed 1.5 (one and a half) multiple of the nominal current.

The frequency converters must be capable of continuous operation even in the event of a short interruption of the supply voltage from the power substation for about 2 s.

The engine speed range control must meet the requirements for the powered drives. In the entire revolution range, the engine cooling must be maintained. Winding warming must not exceed permitted warming values according to ČSN EN 60034-1 ed.2.

The power factor at the input of the frequency converter shall be at least 0.95.

The frequency converter shall have at least the following protection functions:

- overcurrent,
- short-circuit,
- grounding,
- loss of input and output phases,
- overvoltage,
- undervoltage,
- high temperature,
- motor overload,
- motor blocking.

Filters to provide sinusoidal voltage and current for motors shall be installed on the output.

From the converter, these values shall be transmitted to ŘS and the FM control panel: three-phase motor current, motor voltage, motor active power and motor frequency.

The outputs for transmission to ŘS shall be analogue, at 4 ÷ 20 mA.

The frequency converters protection and operating temperature range shall correspond to their working environment, the PURCHASER prefers location of the converters in a separate substation.

The frequency converters must be vector-controlled and must handle flying starts as the rotors of the motors will rotate even when the electric motors are switched off, and also during short-term power outage and repeated restart of the electric motors, the rotors of the electric motors will always be at a non-zero revolution speed.

4.3.4.7 DIESEL GENERATOR

A diesel generator (DG) shall be used to provide emergency power supply, its power output shall be designed by the CONTRACTOR according to the technology used and which during a power outage must be dimensioned to provide not only a safe shutdown of the equipment but also to keep in operation all process equipment required to prevent subsequent damage due to sedimentation, setting, pollution, etc.

The diesel generator shall have the following parameters: 3x400V AC, 50Hz, maximum voltage drop 10%, maximum frequency drop 5%, maximum THD 10%, maximum take-over time of the first load from DG start must ensure safe backup and subsequent shutdown of the technology.

The power output shall be determined by the contractor according to the power consumption of all the appliances required to maintain the desulfurization system operation in the event of a power failure.

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The diesel generator shall be delivered in a permanent container housing. The delivered components shall include: cabinet of the output circuit breaker with the monitoring and control panel, including the DG protections, DG automatic start switchboard and the main circuit breaker, control and synchronization system, complete starter, maintenance-free battery, charger, water radiator, exhaust silencer, fuel tank for 12 hours operation at 75% nominal output without refilling including level gauge, oil fill, engine temperature sensor, retention sump, refueling pump.

The exhaust piping and diesel generator intake shall be equipped with a silencer. With the exception of flue gas emission and hot air emission, the diesel generator must not generate waste.

The start of the diesel generator must be ensured by using an autonomous battery that will be part of the diesel generator supply and the diesel generator must be capable of phasing into the respective electric switchboard.

The diesel generator must be equipped with a specified fuel consumption meter, i.e. it must have an approved, metrologically verifiable fuel consumption meter approved by the Czech Metrology Institute.

The operation of the diesel generator must be free of water use and sewage water discharges.

The start of the diesel generator shall be designed as automatic when the 400 V power supply voltage is lost; if necessary (tests, etc.) it will be possible to start the diesel generator from the central control room.

Additionally, a monitoring SW with a communication link to ŘS will be supplied, reporting operating and error conditions from the diesel generator's automatic switchboard (including fuel quantity monitoring in the tank).

The diesel generator container must be made in accordance with ČSN 38 5422.

The fuel used will be diesel according to ČSN EN 590 Motor fuels - Diesel fuel - Technical requirements and testing methods.

4.3.4.8 DRIVE CONTROL METHOD

Motors and servo drives supplied within the WORK scope shall be controlled by default from the control system. If the control shall be enabled from another location (local control box), it will be ensured that the control is only possible from the selected location. Each control point shall contain a preset status indication.

The coding of the communicators and controllers by colors and complementary means shall be carried out according to ČSN EN 60073 ed.2.

The principles of control shall respect the standard ČSN EN 60447 ed.2.

4.3.4.9 MEASUREMENT OF ELECTRICAL QUANTITIES

Power and currents at all 6kV outputs shall be measured. The measuring instruments shall be placed on the switchboard, the same values shall be transmitted to ŘS MicroSCADA.

The measurement range requirements for frequency converters are described in the chapter on the frequency converters.

Transducers of electrical quantities

Additionally, current and power transducers for measured quantities reported to the control system shall be supplied. The percentage load on the drives shall be reported to the control system, impulses from meters with impulse outputs, which shall be placed on the 6kV outputs of all the switchboards concerned, shall be fed into the electricity consumption metering balance.

These shall be located in the switchboard instrument space.

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Transducers must comply with ČSN and IEC standards.

Auxiliary power supply to the transducers shall be 230 V AC.

Input ranges of the transducers must correspond to the outputs from PTP.

Transducer output is required in the range of 4 ÷ 20 mA.

Transducer accuracy shall be better than 0.5%.

4.3.4.10 REQUIREMENTS FOR ELECTRIC MOTORS 0.4 KV

The electrical motors shall be made according to the standard EN 60034-1 ed.2 and related standards.

The motors shall be designed for continuous operation, with the exception of electromotors for shut-off fittings, which can be dimensioned for short-term operation.

The motors must meet the requirements of driven machines in both steady and transient states.

Constant speed motors shall be asynchronous with a squirrel cage.

Motors with connection to frequency converters must be designed for this connection.

The motors will preferably be supplied from one renowned manufacturer.

The motor power shall be adequate to the performance of the powered equipment. The operating factor, which is the ratio of the nominal power of the motor to the required power on the shaft of the driven machine at the maximum power requirement, shall be as follows, at minimum:

Power requirement	Operating factor
up to 1 kW	1.3
over 1 kW to 10 kW	1.2
over 10 kW to 50 kW	1.15
over 50 kW	1.1

Asynchronous motors with constant revolutions shall be able to supply nominal power at ± 10% voltage fluctuations or at frequency fluctuations of ± 1%. The motors shall be able to supply nominal torque at 70% drop in voltage for 10 seconds without dangerous overheating.

Asynchronous motors with constant revolutions shall be able to accelerate at terminal voltage equal to 85% of the nominal when the full load is connected. The accelerating torque in this state must be at least 5% of nominal.

The winding insulation class shall be at least F when used in class B.

The motor protection shall be at least IP54, terminal block IP54. When placing motors in places with environments with elevated protection requirements, the motor protection must be increased accordingly.

Electromotors with controlled revolutions or electrical motors used for machines operating within a controlled range, shall be equipped with frequency converters.

Reliability and the number of operating hours of electrical motors without maintenance must be consistent with the maintenance and revision terms and the availability of the driven machinery.

Motors located in spaces with risk of explosion shall be designed in accordance with ČSN EN 60079-14 ed.3, corresponding to the classification of hazardous spaces according to ČSN EN 60079-10-1.

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4.3.4.11 TRANSFORMERS FOR NN SWITCHBOARD POWER SUPPLY

Transformers for supplying NN switchboards (technological switchboards and switchboards for wiring in building) 6/0.4 kV shall be air-cooled, indoor versions, for maximum ambient air temperature 40 °C, with castors. In the event that the work shall consist of more than one absorber, each transformer shall be loaded to less than 50% of its nominal power in order to allow a backup in the event of a failure of one of the installed transformers.

<i>Parameter</i>	<i>Unit</i>	<i>Value</i>
Type of cooling in operation	100%	AN
Nominal frequency	Hz	50
Nominal primary voltage	V ± %	6,000 ± 2x2.5
Nominal secondary voltage	V	400
Transformer protection	IP	IP 21 / IP 00
Maximum ambient temperature	°C	40

The power of the transformers shall match the maximum apparent power consumption of the powered devices.

The short-circuit voltage shall be determined by the contractor so that the transformer allows the voltage fluctuations for the appliances according to ČSN 38 1120 Art. 4 in transient and steady states, and so that the short-circuit stress in the substations is within the limits specified by the manufacturer.

Transformers shall be placed in the cabinets with minimum protection IP21.

Transformers shall be equipped with sensors for measuring winding temperature and a door contact.

4.3.4.12 LOCAL CONTROL BOXES

All motors and shut-off servo drives shall be equipped with local control boxes. These will be made of mechanically, electrically and heat-resistant, self-extinguishing, moisture-proof plastic with minimum protection IP54. The bearing structures for these boxes shall be made of galvanized steel.

The local control box function shall be enabled by a control element located on the appropriate box.

For local control, the boxes shall be equipped with a status indication ON/OFF, RESP. OPEN/CLOSED and buttons "On", "Off" or "Open", "Close" and "Stop", and an indicator "Local control active". Further, the local control of the servo motors shall allow step by step control, opening and closing of the shut-off fitting servo motors in continuous steps.

Commands ON/OFF, OPEN/CLOSE STOP, or step by step control of the appliance shall only be possible from location where selected.

The control shall be made at 230 V AC. The control voltage shall be introduced directly into the control circuits in the respective switchboards.

4.3.4.13 TRANSITION BOXES

The boxes shall be made of mechanically, electrically and heat-resistant, self-extinguishing, moisture-proof plastic with minimum protection IP54. Only terminal boxes shall be inside.

Bearing structures for these boxes shall be made of galvanized steel.

Motors shall be connected to the boxes by tightly connected flexible leads.

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Servo drives and solenoids shall be connected by means of movable leads with plugs.

The transition boxes can be combined with local control boxes.

Boxes located in spaces with explosion hazards shall be of a design in accordance with ČSN EN 60079-14 ed.4, corresponding to the classification of hazardous area according to ČSN EN 60079-10-1.

4.3.4.14 EMERGENCY EQUIPMENT STOP

In wet desulfurization areas, where required by appropriate standards, emergency stop buttons shall be placed.

4.3.4.15 OTHER ELECTRICAL EQUIPMENT AND ACCESSORIES

Other supplied electrical equipment and accessories must comply with standards, IEC and ČSN standards at minimum, as follows:

Parameter	Value
Instruments for disconnecting and switching	ČSN 33 2000-5-537
NN switching and control instruments	ČSN EN 60947-1 ed. 4
Circuit breakers	ČSN EN 60898-1 to 2, ČSN EN 60934 ed.2

4.3.4.16 ELECTRICAL EQUIPMENT CONTROL AND MONITORING

Control and monitoring of electrical equipment in desulfurization and preparation of limestone suspension shall be carried out from the central control room and from ŘS MicroSCADA.

4.3.4.17 ASŘTP POWER SUPPLY

A new uninterruptible power supply (UPS) system shall be supplied to power the new ASŘTP equipment.

The new UPS shall be powered from the newly supplied NN switchboard.

Power supply requirements:

- any failure of the ASŘTP power supply system shall not cause any problems in the controlled technology and there will be no changes in the positions of the actuators,
- all components of the system shall be powered so that any instrument can be replaced at any time without having to disable other parts of the system,
- the diagnostics of the power supply system shall be part of the diagnostics of the entire control system.

4.3.4.18 PROTECTION AGAINST ELECTRIC SHOCK

Protection against electric shock shall be implemented according to the standards, ČSN 33 2000-4-41 ed.3: Protection against electric shock, ČSN 33 2000-4-473: Measures for protection against overcurrents, ČSN EN 61140 ed.2 Protection against electric shock - Common aspects for installation and equipment and standard ČSN 61936-1: Electrical installations exceeding AC 1 kV.

The equipment shall be installed in accordance with the standard ČSN 33 2000-7-729: Low voltage electrical installations - Part 7-729: Single-purpose facilities and in special buildings - Operating or maintenance spaces.

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The design and layout of the instrumentation, the operating and supply voltage used must ensure the safety of both of the operator and the maintenance personnel.

4.3.4.19 GROUNDING

All supplied metallic, conductive equipment and all other components shall be interconnected effectively in accordance with valid legislation to ensure the protection of the conductive parts.

The grounding of all supplied equipment shall be made according to the standards for individual devices and according to ČSN EN 50522, ČSN 33 200-5-54 ed.3 and ČSN 33 2000-4-41 ed.3 and related standards.

All installed designed and convenient grounding elements, as well as all conductors providing grounding and connection, shall be appropriately marked.

4.3.4.20 SERVO DRIVES

Shut-off and control servo drives shall be electrical.

Power amplifiers for the control of servo drives shall be integrated directly into the servo drives.

The positions of the regulating elements (valves, flaps) shall be measured by sensors with a current output of $4 \div 20$ mA.

Large shut-off servo drives and shut-off servo drives requiring step by step control approach during start up, operation, and shutdown, shall be equipped by position sensors with a current output of $4 \div 20$ mA.

No-contact sensors shall be used for position sensing - the use of resistive position sensors is not allowed.

The control circuits of electrical drives shall be protected by a separate fuse for every circuit.

The use of servo drives where the number of circuit closings is limited by the control software because of durability concerns, is excluded.

4.3.4.21 CABELING

General requirements

All cables and conductors conducting electrical current shall be designed and dimensioned with regard to the type and magnitude of the transmitted quantity and the specific working conditions. It shall be ensured, in particular, that the working temperature is not exceeded, that no undesirable quantity loss occurs, that the cross-sections of the cores are within the economic limits and that the conductors are sufficiently strong.

The used hn and nn cables must comply with the requirements of ČSN. Termination of cables and bending and the method of installation shall comply with the conditions specified in ČSN and the cable manufacturer.

When introducing cables to switchboards, boxes, panels and appliances, the cable guard diameter must match the diameter of the cable installed. Cable passage from the switchboards to the cable ducts and spaces shall be provided with a fire partition.

Material and cross-sections of cable cores

Cables for control circuits shall have copper cores, power cables with cross-section of conductors of up to and including 35 mm^2 - copper cores, aluminum cores may be used for cables with cross sections from 50 mm^2 and larger.

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The design of the cable type and cross-section must be carried out in compliance with the requirements of the standards ČSN 33 2000-4-43 ed.2, ČSN 33 2000-4-473 and ČSN 33 2000-5-52 ed.2, and particularly reflect specific conditions:

- short-circuit currents,
- maximum continuous operating load,
- allowable voltage drop,
- environment in which they are installed (ambient temperature, humidity, presence of oils, chemicals, etc.).

Maximum temperature of the cores at any operating condition and at any point of the cable must not exceed the permissible values prescribed by the manufacturer of the cable type used. The requirement is that in most cases it does not reach 80% of this value.

When determining the short-circuit stress, the most damaging conditions of source connections (i.e. the maximum possible short-circuit current) must be taken into account and also the tripping times of the protections, circuit breakers and fuses must be respected.

Maximum voltage drop must be in line with the power requirements of the appliances - in both steady and transient states.

Cable insulation material

Cable insulation material must meet the requirements for electrical insulation properties, adequate mechanical properties, resistance to temperature, humidity, chemicals and oils.

VN cables shall be insulated by XLPE and PVC jacket. NN cables shall be all-plastic (PVC) with increased resistance to flame propagation in locations with increased fire risk.

Cable structure

The cable structure must be suitable for its application, in particular with regard to the mechanical resistance of cables to external influences, of sufficient flexibility and with protection against interference impact on low voltage cables. For control and signal cables connected to the control system, it is preferable to use twisted pair cables.

In places where there is a danger of mechanical damage, the cables must be fitted with appropriate mechanical protection.

Protection from induced interference signals

It is necessary to apply complex measures to prevent the induction of disturbing signals in the control system by:

- using suitable cable structure (twisted pair, cable shielding, etc.)
- routing and installing power and auxiliary cables in separate trays; if it is necessary to route cables of different voltage or current systems side by side, they will be placed into separate enclosed trays,
- installing cables for low-level measurement and control signals (4 ÷ 20 mA, Pt100, thermocouples, etc.) in closed cable troughs,
- reliably shielding the cables in one place (avoiding ground loops),
- using materials and technologies resistant to electromagnetic and electrostatic interference (e.g. optical computer bus), etc.

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Cable routing and laying

Cables shall be laid in one section. Where there is a need to divide or connect the cables, a special split or junction box or cabinet shall be used, with a degree of protection that shall correspond to the environment in which the cable splitting or joining is made.

No signals of different voltage levels shall be transmitted in one cable.

The cable routes shall be installed so that the maximum ambient temperature does not exceed the permissible values prescribed by the manufacturer of the type of cable used. The requirement is that in most cases it does not reach 80% of this value.

The cable ends shall be suitably protected from the environment (moisture or wetness, chemical influences, etc.) before installing the terminals.

The gangways and auxiliary supporting structures shall be steel, galvanized to protected against corrosion.

The space reserve in cable routes shall be minimum 20% above the designed requirement.

Fire protection measures for cables and cable routes

In order to reduce the possibility of fire and consequential damage, the following measures shall be taken:

- functionally important cables, cables belonging to parallel, backup and emergency units shall be laid in separate routes,
- cables shall not be placed directly on flammable material and must be separated by a sufficiently heat-insulating mat,
- cable rooms and ducts shall be divided into fire sections by main fire partitions,
- the main fire partitions shall be located at:
 - cable duct and bridge inlets to cabinets and shafts,
 - cable shaft inlets to the cable compartments,
- partial fire partitions shall be located between the main fire partitions, in particular:
 - at crossings of cable routes,
 - at the beginning of branches,
 - at every 50 m of duct length,
- pipe conduits in cable compartments, ducts, shafts, bridges, and cable conduits from the switchboards to cable compartments shall be sealed by a fire seal with the same fire resistance as the surrounding building structure,
- cable conduits in floors, walls and at the points of entry into the switchboard must comply with ČSN 33 2000-5-52.

Cable marking

Cable marking shall be performed in compliance with the KKS methodology.

A uniform numbering system shall be implemented for electrical connections of all control and instrumentation equipment.

At both ends of all cables, labels of suitable insulating material resistant to moisture and oil shall be installed, on which the following data shall be clearly and legibly indicated (in the order shown):

- from where the cable leads,

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- cable number,
- type of cable,
- where the cable leads.

These data must be the same as those used in all documentation processed by the CONTRACTOR.

Cables and cable routes for control cabling and for power cabling shall be appropriately labeled every 20 m of length and on both sides of the fire partitions (in accessible places); along the route cable marking of the whole bundle is sufficient, at cable ends and fire partitions cables shall be marked individually.

Cable labels must remain legible and fastened to the cable for the service life of the cable in the given environment.

Marking on the cable wires shall be implemented by clamps designating the terminal and terminal block. The terminal blocks shall be numbered. Unconnected wires shall be labeled "Reserve".

4.3.4.22 CABINET MECHANICAL DESIGN

The cabinet design must reflect the mechanical stress during operation and transport, electrical, thermal and short-circuit stresses and must be resistant to environment where used.

All cabinets shall preferably be of the same design.

When mounting electrical items in the switchboard, if the construction layout allows, use of DIN rails is recommended.

Measuring instruments monitored by the operators must be positioned so that the data on the scales and displays are readable. Instruments for general readings shall be located in heights of 1200 to 2000 mm and for precision readings in the range from 1400 to 1700 mm.

Manual control instruments must be at a height allowing easy manipulation. This corresponds to a height of 400 to 1800 mm above floor level depending on the nominal current of the instrument. Emergency buttons and signal fittings shall be located at a height of 1400 to 1500 mm, other button and signal fittings at a height of 900 to 1700 mm.

Terminal blocks must be clearly arranged, accessible and permanently marked. Terminals and terminal boards must be placed at least 200 mm above the bottom of the switchboard.

Only one wire shall be connected to each terminal (unless the terminal is designed to connect multiple wires). The cables shall be attached at the point of cable entry into the switchboard by fixed clips, such as SONAP.

Where possible, clamps with spring connections (not screw clamps) shall be used.

The control system cabinets shall be equipped with a transition terminal block between the power cable and the system cards. It is not allowed to connect the cables directly to the control system cards. The terminals of the transition terminal blocks shall have disconnecting design.

Each cabinet shall have minimum one grounding point distinctly and durably labeled for connecting the ground wire of sufficient cross section.

The cabinets shall be equipped with a sufficiently dimensioned strap for easy connection of all the shielding wires of all entering/outgoing cables. The strap shall be electrically insulated from the rest of cabinet structure and will be color marked according to the standard.

The cabinets shall be also equipped with a suitable system of connecting terminals (or other connecting elements), internal distribution and the arrangement of connecting cables.

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The cabinets shall have two primer coats and one outer coat. (The quality of execution and color solution are subject to PURCHASER'S approval).

The direction of opening of the door must correspond to the layout, i.e. it must be adapted to allow easy access to the cabinets. If the cabinet width is greater than or equal to 1000 mm, the door shall be split.

If necessary, where natural ventilation is not sufficient, the cabinets shall be air-conditioned.

Each cabinet shall be marked in the upper left corner with the KKS code, the input switchbay of switchboards also by verbal description.

A list of appliances and equipment, including the KKS code, shall be placed on the face of the door. A matching list shall be on the inside of the door, complemented by the KKS code specification of the appliance location.

For modular cabinets, the terminal boxes shall be located at the rear of the switchboard and the switchboard shall be equipped with a rear door on hinges.

All switchboards shall be provided with asbuilt documentation on the inside of the door. This mainly concerns the connection of terminal blocks; for transducer and transfer relays cabinets also their wiring. The individual drawings shall be sealed in plastic covers.

4.3.4.23 ELECTRICAL EQUIPMENT MARKING

All elements shall be marked by a tag with verbal description and the relevant KKS code. The tags shall be made of PVC material with engraved description and visibly placed on the relevant technological element.

4.3.5 SKŘ – INSTRUMENTATION AND CONTROL SYSTEM

The wet desulfurization control systems are concentrated in the process system PS 14 - SKŘ - Instrumentation and control system. Any additional subdivision of PS 14 structure may be proposed by the CONTRACTOR proposed in the DESIGN, after an agreement with the PURCHASER, also the possible transfer of some SKŘ technical components, physically delivered as part of the process technological equipment within the respective mechanical and process PS.

4.3.5.1 SKŘ BASIC CONCEPT

SKŘ shall consist of a control system and operational instrumentation (metering devices and actuators) interconnected by data and power cabling into one operational unit that ensures automated, reliable, long-term and safe operation and monitoring of all desulfurization technologies.

The basic process technology control system shall be DCS (distributed control system) whose architecture, performance, application and other features shall meet the requirements of this specification.

DCS may be combined, in justified cases, with autonomous components for the control, protection and monitoring of equipment based on PLC, where the component was developed for a specific purpose or where it is part of standard equipment of special equipment or packaged units and supplied as a standard equipment for the management, protection and monitoring of these process technology systems.

In this case, components based on the same HW and SW as is the DCS and programmable by DCS engineering tools are preferred.

All of these components must be integrated into the DCS structure so that it can control and monitor all technology in a coordinated way by DCS and its HMI tools.

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For the entire set of controls used to control and monitor process technologies (i.e., DCS, autonomous PLC-based resources and dedicated systems), the common term "**control system**" (ŘS) is used in this specification.

The wet desulfurization control system shall be integrated into the existing TKY Honeywell Experion PKS control system.

4.3.5.2 METHOD OF CONTROL, CONTROL LOCATIONS

Central control room

The ŘS shall be designed to enable monitoring of all process technologies, with the exception of operations requiring direct supervision and control, from one location - the central control room.

The workplace of the system engineer shall be also set up in the control room.

Local control points

ŘS will be supplemented, where necessary for safety reasons or for testing, operation and maintenance of the controlled equipment, by local control tools. It must be ensured that it is not possible to control the same device from more than one location at a time.

These include in particular:

- Local control panels or terminals

These tools shall only be used where the equipment control requires direct supervision, where necessary for service reasons, possibly for special equipment (production and shipping of energo gypsum, in dry ash loading station, or other places as required by operation control needs).

- Local control boxes for individual drives

Important motors and shut-off servo drives shall be equipped with local control boxes or directly equipped with local controls for local control.

Refer to Chapter 4.3.4.12 for local control boxes.

- Local emergency stop buttons

Where necessary for safety reasons, local emergency stop buttons shall be installed in operation areas to allow emergency stop of the machinery.

4.3.5.3 HUMAN-MACHINE INTERFACE (HMI)

HMI shall be designed for single-operator process technology control. Control and monitoring shall be integrated into the operator environment of boilers K06 - K10. The operator environment of the newly supplied operator's workplace shall allow the management of the new desulfurization technology from any KY II boiler technology operator's station.

The control room space shall be equipped with the following operator communication means:

- One (1) operator station with two 24" 16: 9 industrial wide screen monitors (part of DCS) to control and monitor all technological equipment.

The operator station shall be functionally equal to the existing operator stations so that from each of the stations it is possible (depending on the access rights of the operator) to control and monitor any DCS-controlled process technology equipment.

- One (1) PC-based engineering workstation for parameterization, programming and maintenance of the ŘS system with the possibility of use as a backup workplace for operators.
- Conventional controls

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The control room shall be equipped with the necessary conventional emergency shutdown controls, a fire alarm button, etc., which shall allow control of the connected equipment independently of the operator stations. These elements shall be located within the immediate reach of the operator.

The control room shall also be equipped with all the tables and panels for placing/installing the above described operator communication means and other necessary furniture, including operator's chairs with armrests and head rests for permanently present operators. The operator's desks shall offer sufficient space for the placement of telephones and documentation.

The operator station shall communicate directly with the ŘS control unit. It is not allowed for the station to communicate via a third device - a server, PC, etc.

The mixing center space shall be equipped by:

- One (1) operator station with two 24" 16: 9 industrial wide screen monitors (part of DCS) to control and monitor all mixing center technology.

Control touch panels shall also be located in the energo gypsum production and shipping station, in the dry ash loading station, or at other places as required by operation control.

4.3.5.4 LEVEL OF AUTOMATION

ŘS must ensure automatic and safe operation of all process technologies delivered within the WORK scope.

All handling that does not necessarily require on-location supervision must allow remote control from the DCS operator station. To achieve this, it is necessary to equip the technology with the necessary sensors and servo drives (control valves with control drives including all auxiliary devices) with the possibility of remote signal transmission to the control system. Walk through inspection is permissible only occasionally, namely 1 x in 8 hours, and when starting and stopping the equipment.

The technology control shall be designed as multilevel, with the following top to bottom hierarchy:

- Start-up, shutdown and coordinated operation of desulfurization as a whole.
- Start-up, shutdown and coordinated operation of individual operation systems (PS).
- Start-up, shutdown and coordinated operation of individual equipment sets and equipment items including related accessories. At this level, automatic actuation of mutually backed-up process technology equipment shall also be designed.
- Control of individual actuators.

4.3.5.5 BASIC ŘS FUNCTIONS

The supplied ŘS shall be equipped with all tools to provide the following functions:

- data collection from the process (measurement, technology status)
- control and monitoring of the process technology delivered within the WORK,
- monitoring of electrical power and own consumption of desulfurization,
- monitoring of selected technology state data, supplied by the CONTRACTOR as part of technical equipment of buildings, such as:
 - ventilation and air-conditioning control systems,
 - heating of buildings,
- monitoring of auxiliary operations

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- monitoring of signals from special equipment supplied within the WORK scope, such as:
 - electronic fire alarm system (EPS),
 - emission monitoring system,
- long-term measurement and calculations of operating and balance values,
- data upload to UE a.s. computer network, (data export from the system - status of main process technologies and desulfurization operation states to the Honeywell archiving SW PHD),
- on-line diagnostics of ŘS,
- communication with operators through DCS operator/engineering stations,
- communication with operators through conventional controls,
- external communication with all downstream devices.

The scope is as follows:

Data collection includes in particular:

- processing of measuring signals from operation, including their linearization, filtration, their conversion to technical SI units, creation of limits and fault signals and detailed diagnostics of selected input signals.

Control functions include in particular:

- discreet control,
- continuous control including cascade controllers,
- protective functions:
 - technological blockades and protection of individual machines,
 - protection of individual technologies as well as the protection of interconnected operational units or operational sets.

Monitoring functions include in particular:

- display status of technology and electrical technology including instantaneous values of the measured quantities,
- special screen for each processed problem, concentrating information related to the given problem,
- processing fault indication signals with priority sorting and suppression of undesirable signaling,
- archiving function with the possibility of analyzing historical data,
- display and archiving of event sequences,
- the generation of time lines of process variables, both in real time and using data from the archive (trends of functions $y = f(x)$),
- calculations of derived quantities,
- monitoring of operating hours of selected drives,
- creation and printing of reports, charts, protocols, etc.,
- preparation of data for operational and economic calculations,

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- special data sets presented at the maintenance terminal,
- potentially other functions.

Measurements and calculations of operating and balance values include, in particular:

- material balances,
- measurement of consumed electrical energy.

The on-line ŘS diagnostics includes in particular:

- continuously and automatically running ŘS diagnostics capable of detecting hardware failures as well as software changes (damage) and providing detailed information on the detected error and its location to the level of the individual system card.

It will ensure at minimum:

- during commissioning (including restarts) - checking the correctness of the HW functions and status and checking the configuration of the embedded SW,
- during operation - on-line check of HW functions and status, performed sequentially so that the complete HW status (i.e. correct CPU function, integrity of all memories, correct power function, proper function of I/O modules, etc.) shall be checked approximately within 10 minutes,
- continuous control of communication, based on diagnostic information contained in the communications transmitted and on the basis of methods capable of reliably detecting a failure of the connection,
- checking of all analogue and binary values so that the value and value converted to SI units is displayed at any time,
- algorithm modification online without the need to shut down the technology.
- immediate and automatic ŘS response to problems diagnosed on-line, in accordance with the principles of a "fail-safe design" (e.g. issuing incorrect instructions and incorrect information must be prevented);
- processing and presenting diagnostic information from ŘS in a uniform manner on the respective service and maintenance terminals.

Control and monitoring functions shall cover all possible equipment operating conditions (start-up, shutdown, normal operation, fault states ...).

Monitored quantities shall include all data obtained from the operational measurements, internal ŘS diagnostic data of the control system, data obtained by diagnosing ŘS input signals and the connected special systems of the PURCHASER.

All media inputs and outputs to individual PSs and all values of the quantities monitored by the air protection system must be measured, archived and balanced.

Communication tools include all HW and SW resources needed to provide the above functions, including appropriate optical or metallic cabling.

4.3.5.6 ŘS ARCHITECTURE

Distributed Control System (DCS)

ŘS shall be based on DCS built on a unified HW and SW platform of a renowned manufacturer.

Real-time DCS shall consist of autonomous microprocessor-based stations capable of stand-alone operation, independent of the function of the other stations.

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These stations shall communicate with each other via a backed up (or otherwise securely protected from connection failure) data network.

The individual functions of the system shall be appropriately distributed to the individual stations to minimize the impact of any failure of any of the stations on the controlled process.

Where appropriate, not only functional but also spatial decentralization of the system shall be implemented. A solution is possible where part of the system intelligence is distributed down to the level of intelligent units located directly in operating equipment.

DCS, including related devices, must be designed with respect to the "safe operation" principle, i.e. any local failure (signal loss, power supply failure, control or I/O card failure, failure of one of the stations, etc.) must not lead to an unnecessary process technology shutdown, to a long-term restrained operation or to the emergence of dangerous or hazardous situations. In the event of a total system failure, the process technology must be brought to a safe state.

ŘS must be open - it must allow further expansion of the system hardware configuration and the integration of third-party devices using open industry communication standards such as ETHERNET, PROFIBUS, MODBUS, including direct integration of alarms and events without duplication of data from one system to another.

The system must be configurable on-line - it must allow on-line changes in application software and of all parameters. At the same time, it must be possible to replace any faulty ŘS component while the corresponding redundant part shall be active. Modular solution is required so that repairs may be implemented by replacing faulty modules in operation, without the need to restrict operation or shut down the device.

No combination of input/output signals of internal states or operator commands shall cause the system (or any part thereof) to be blocked.

Depending on the role of individual DCS component elements, the system may be structured as follows:

- Automation stations for process control including interface between DCS and process (I/O)
- Communication system providing data transfer among DCS stations and data transfer among DCS and downstream digital systems
- Stations providing human-machine interface (HMI) function, including:
 - operator stations
 - engineering workstations
 - servers for operator and archiving purposes

Autonomous PLC-based devices

It is acceptable that, under the conditions specified in Chapter 4.3.5.1 (SKŘ BASIC CONCEPT), after consultation and with a written approval of the PURCHASER, some technological subsystems shall be equipped with autonomous devices for the control, protection and monitoring based on PLC or simple logic controllers

These may be subsystems such as fabric filter control, and similar.

These resources must be fully integrated into DCS. This means that as a priority they must be equipped with the same type of processor or from the same manufacturer and connected to the main process DCS bus or must ensure their connection to the DCS processing station using open industrial communication standards such as ETHERNET, PROFIBUS, MODBUS. OPC communication is not allowed for communication among the control and monitoring systems.

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The transmission of important signals e.g. for blocking and protective functions shall be implemented by directly connected signals. All safety control functions shall be secured by a HW connection, independent of the ŘS function.

Preferably, their programming using the same programming tools as DCS (from DCS engineering workstation) should be used.

4.3.5.7 COMPONENT REDUNDANCY

Where the requirement for redundancy of the individual SKŘ components is not specified in this Supplement to the CONTRACT, redundancy shall generally be at least on the level of:

- operator stations, incl. servers for operator purposes, if used,
- communication routes and nodes (servers, buses, communication modules, switches, etc.)
- processors of control (automation) stations of important equipment, in particular:
 - where a processor failure could compromise the operation of the desulfurization or cause loss of production,
- I/O modules for technologically important operating units (operating sets) or protective systems,
- selected sensors of process quantities (to be connected to different I/O cards),
- power supply modules.

For redundant components, smooth and impact-free transition from master to backup and vice versa shall be ensured, without the need for operator intervention.

Where possible, redundant elements shall be installed in geographically different locations.

4.3.5.8 REQUIREMENTS FOR THE DESIGN OF ŘS MAIN PARTS

DCS Servers

The use of DCS servers in the control system architecture is allowed.

Server configuration shall be with redundant connectivity and configured so that they can be used for process technology control.

In the event that the control system already used in the heating plant shall be supplied and if it is expected to be incorporated into the existing HW structure, and which is already equipped with sufficient capacity redundant DCS servers, new DCS servers are not required.

A modification of the operator's workstation from the DCS server requiring intervention at all operator stations is not allowed.

DCS servers shall be the source of a time stamp for operator stations and the engineering workstation.

DCS servers shall include a license (each server) to run the operator environment identical to the operator's station.

The DCS server shall include a local kernel based virtual machine in a rack configuration with switching to both servers.

Operator stations (part of DCS)

These stations are the basic interface between the operator and the process. Each OS includes its own computer station, monitors, keyboard, and a pointing device (mouse).

All OS monitors must be of the highest industrial quality, designed for continuous operation.

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The keyboard must have normal QWERTY functions plus national keys for the Czech language.

Any OS shall allow, based on the appropriate access rights, to run an HMI application of any process technology.

OS screens shall allow the display of on-line images from operating camera systems.

Mode of display on station monitors

The display of media, actuators and values shall be identical to the existing K6-K10 boiler visualization.

The values of all measured quantities shall be preferentially displayed on the screens of all stations in the physical units of the International Measurement System (SI).

All information on service station screens interfacing with the operators must be in the Czech language, as well as all printed reports, protocols, etc. English may only be used for system screens of the system engineer's workstation. Each Czech letter must be accurately displayed, including diacritical marks.

Database and system integration (part of DCS)

A global database is required.

The management and configuration of alarms and events must be global. Each alarm must be configured only once for any operator station. Confirmation of one alarm at one operator station must ensure confirmation of the same alarm at all operator stations. Separate alarm databases at individual operator stations are not allowed.

Additionally, the supplied system operation history module shall store any and all measured and calculated values and device statuses in an archive for later analysis. The archive shall have the capacity to keep all the events and trends entered for the minimum period of 1 month, and allow long-term archiving of selected data.

The archiving operation must be completely automatic, independent of the operator.

Using historical data, it must provide comprehensive information on:

- equipment operating conditions prior to failure,
- course of important variables before and after failure within given period (post-mortem),
- operator's actions related to the failure.

Engineering workstation (part of DCS)

The engineering workstation shall provide all the engineering tools and hardware resources necessary for the configuration, operation and maintenance of the system by PURCHASER'S personnel.

If the engineering workstation function is performed by DCS servers, an engineering workstation is not required.

The design (including the LCD monitor) shall correspond to the operator stations, shall allow taking over the operation of any OS, but will be equipped with only one (1) monitor.

The workstation shall allow the function monitoring of all automation stations or potentially servers connected to the bus and initialize and restart the system. It must include software for analysis of all connected stations, database management, management and configuration of intelligent operating devices (according to the FDT/DTM or EDD standard), initialization and configuration procedures.

This function includes in particular:

- displaying detailed information about the status of individual stations,

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- graphics configuration for the operator station in a graphic, interactive way using symbol libraries in an on-line status of the system,
- configuring application software for individual stations and editing them on-line, enabling:
 - generating a database,
 - creating control algorithms in a graphical manner,
 - configuring different screen views at the operator station,
 - defining data for archiving including determining the sampling period, method of storing (hourly, daily averages, etc.) - configuring different reports and protocols,
- introduction of system and application software into individual stations,
- prior to the final transfer of the modified algorithms to the automation stations, it must be possible to simulate this modified logic using actual input variables with the output disabled (so-called "dry run"),
- create documentation of the system actual status (hardware and software configuration).

Access to this station shall be protected by passwords corresponding to the different levels of access rights

Automation stations (part of DCS)

The type and number of automation stations shall be established by the CONTRACTOR based on the requirements for reliability, redundancy, required system reserves (see Chapter 4.3.5.10) and taking into account the computational capacity of the stations.

The automation stations shall control important PSs, designed with redundant power supply, processor unit and a communication interface. They shall be linked through a redundant communications network.

The stations and its programs must remain functional even if communication with the operator station or other automation stations is interrupted.

The application programs of these stations must be stored in a power fail safe memory (FLASH).

The stations shall be equipped with self-diagnostics up to the level of individual units and their inputs and outputs.

The range of I/O units must be able to receive and transmit all kinds of standard measurement and control signals.

The input side of the control systems must ensure the resilience of the system input against intrusive 500 V voltage, at minimum, and a short-circuit at the sensor terminals.

For I/O units without backup, multiple important devices (especially where mutual back-up technology devices are involved) must not be connected via one I/O unit.

Redundant input/output units must always be connected only via a redundant communication network.

The number of inputs/outputs per card must not be greater than 32.

The system must allow for the exchange of defective cards under voltage without affecting the controlled process.

The input analogue unit must provide, at minimum:

- filtering and converting the input analogue signal on the bus,
- galvanic isolation of inputs from the bus,

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- conversion of A/D converters minimum 12 bits,
- calibration and reset with automatic parameter setting according to a reference value,
- evaluation of input signal limits with the possibility of remote setting of limits and hysteresis through the bus (may be solved also in the CPU),
- signal filtering and suppression of 50 Hz frequency especially and higher harmonics,
- ability to power sensors with current loop,
- unit self-diagnostics, such as short-circuit diagnostics and analogue card loop disconnection.

For systems not using microprocessor-based input analogue units, some of these functions (limit evaluation, signal validation, correction, etc.) can be performed within the CPU.

The input binary unit must provide at minimum:

- filtration and conversion of the input binary signal on the bus,
- galvanic separation of inputs from the bus,
- signaling the state of each input signal on the unit,
- any polarity of the common pole,
- two-wire connection of contact inputs,
- unit self-diagnosis.

The output analogue unit must provide at minimum:

- galvanic separation of the output analogue signal,
- standard output voltage or current signal $0 \div \pm 10V_{ss}$, $0/4 \div 20$ mA,
- evaluation of output loop break,
- short-circuit protection at output,
- unit self-diagnosis.

The output binary unit must provide at minimum:

- galvanic separation of the output binary signal,
- signal status of each output signal,
- unit self-diagnosis.

The failure of one channel of the system I/O unit must not impact the operation of other channels in the same unit.

PLC based autonomous controllers

Autonomous PLC-based controllers are subject to the same requirements as the DCS automation stations. Any exemptions are subject to approval by the PURCHASER.

Communication

The data communication between the different levels of RS involved in the management of control and monitoring functions should be deterministic, so that the requirements for data flow and the properties of its behavior are independent of process technology events. If deterministic communication shall not be used, the data transmission lines must have such transmission capacity that they do not overload, lose data, or cause unacceptable data transmission delays, even at maximum data transmission loading.

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The integrity of data structures and protocols used in transmission lines must be such that the system reliability is not significantly reduced by bus communication errors or collisions in access to shared devices such as data busses or shared memory for redundant processor systems.

All communication within the supplied control systems as well as between the supplied control systems and the downstream digital systems of the CONTRACTOR with specific functions (emission monitoring system, etc.) must use internationally recognized protocols. Selected protocols must support fault checking and troubleshooting.

For communication networks, industrial Ethernet with a communication speed of min. 100 Mb/s is preferred.

4.3.5.9 REQUIREMENTS FOR SPECIFIC FUNCTIONS

Protective systems of main desulfurization process technologies

The CONTRACTOR shall, when designing the equipment, take into account unplanned operating conditions, such as switching off the desulfurization fan, temporarily elevated flue gas temperature, vacuum and pressure fluctuations, total power supply failure, etc., and suggest measures for their control in the DESIGN.

Concurrently, the WORK shall include tools for diagnostics of non-standard equipment states and the associated automatic protection systems that, when a non-standard state potentially resulting in equipment damage or a threat to the safety of persons and operations is detected, shall take the necessary action to bring the device to a safe state.

Coordination of new and existing equipment systems

In the desulfurization and boiler control system, a combined load regulator for the flue gas booster fan and flue gas fans of the individual boilers shall be implemented in order to prevent an unstable or pseudo-stable (i.e., with one fan operating with minimum load and the second fan operating with maximum load) system status.

Control, monitoring and logging of desulfurization electrical equipment

The control and monitoring of the desulfurization electrical equipment shall be addressed through the operator stations and other DCS tools. For this purpose, a SW system shall be created in DSC so that the system can perform at least the following functions in relation to controlled and monitored electrical technology:

Control:

- remote control of circuit breakers at voltage level 6 kV,
- switching on/off of transformer circuit breakers 6/0.4 kV,
- remote control of main and back-up switchbays, NN transformer outlets in substations,
- the possibility for the operator to release control from the local control cabinets,
- diesel generator (DG) start remote control for test purposes.

The back-ups shall be selectable automatically and manually. Manual control shall enable operation of circuit breakers in the main and backup switchbays.

When backing up the substations (short-term power failure), the outage of the control system or technological equipment must be prevented.

Monitoring:

- monitoring the state of switches and grounding devices in 6 kV substation,
- monitoring operating values of all transformers,

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- monitoring of reports from the set of electrical protections, protection of 6 kV substations, NN substations, viewing the settings, viewing of event register,
- monitoring of voltage and current loads of main and backup switchbays, 6 kV substations, VN/NV transformer outlets in substations and NN transformer outlets,
- monitoring the state of the secured power supply (UPS, DG, LV switchboards),
- monitoring the status and position of switches and important circuit breakers,
- event and alert processing,
- resetting protection,
- reading and displaying the operating hours of main equipment items,
- processing of different types of reports of el. energies, currents and outputs, etc.

Logging of electrical equipment states:

- logging of the power system, relay protections and measurement data,
- state and warnings of switchboards,
- logging motor data, fault and measurements,
- NN control voltage state and warnings,
- etc.

Transfer of desulfurization data to TKY

Communication between the desulfurization ŘS and the TKY ŘS is assumed, ensuring transmission of information from desulfurization to, among others, the existing PHD archiving system in the UE.

4.3.5.10 QUANTITATIVE REQUIREMENTS FOR CONTROL SYSTEM PERFORMANCE AND RESERVES

Parameter	Value/information
Response times	
Sequence of events resolution (SOE) (including events occurring within the system, such as analog signal limits, operator intervention, etc.)	$\leq 10 \text{ ms}$
Time between the operator's instruction and output to the downstream device (actuator, electrical switchboard, downstream control system)	$\leq 1 \text{ s}$
Time between changing value of input variable and its display on screen	$\leq 1 \text{ s}$
Reserves	
System memory reserve, minimum	30 % evenly distributed throughout the system
System execution time reserve	$\geq 30 \%$ evenly distributed throughout the system

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Parameter	Value/information
Reserve in number of database items (tag, point) for all process variables and for all other data (including diagnostic) arising in ŘS, both for processor part and for the visualization part	$\geq 20 \%$
Reserve in the number of free inputs installed	$\geq 20\%$ for each type of input signal used (reserve size of any of the system input and output cabinets may not fall below 5%)
Reserve in the number of installed free outputs	$\geq 20\%$ for each type of input signal used (reserve size of any of the system input and output cabinets may not fall below 5%)
Reserve on each I/O module	≥ 1 I/O
Reserve in unconnected I/O modules	Minimum 1 module of each type (number of free I/O on these modules is not included in the 20% reserve in the number of free inputs and outputs installed)
Wired reserve in the ŘS cabinets for installing additional I/O cards	$\geq 10 \%$ evenly distributed throughout the system
Additional free space in cabinets (switchboards) usable for additional expansion of system capacity	$\geq 15 \%$

4.3.5.11 COMMON REQUIREMENTS FOR ŘS

System dimensioning

The ŘS capacity (HW and SW), including related communication networks must enable the control and monitoring of all process technological equipment supplied within the WORK scope, while complying with the additional performance requirements and system performance requirements specified in this Supplement to the CONTRACT.

The capacity of all communication devices must be designed so that, using all the specified reserves, no communication network or parts thereof are overloaded under any operational or fault conditions of all control and information systems supplied within the WORK scope.

PC and server based stations design

In order to install PC-based stations (operator stations, servers), it is required to use to a maximum extent the rack installation with connecting the operator terminal via an optical or metallic cable to the control room. The racks must be equipped with operation diagnostics (temperature sensors with alarm message, etc.), their design must correspond to the conditions in which they shall be placed (dust filters, ventilation).

Time synchronization and time stamps

All parts of the ŘS including any other digital devices used to control and monitor the WORK operation must be time synchronized using a single precise time source.

An NTP server synchronized with a GPS signal receiver supplied by the CONTRACTOR (PTP or SNTP protocol) shall be used as the precise time source.

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Resilience to environment

All parts of the ŘS must be protected against the potential hazards associated with the operation of the desulfurization technologies and be capable of operating under the conditions in which they shall be installed. Account must be taken of all environmental conditions relevant to the installation.

The degree of protection shall be appropriate to the function of the device, the location of the device and the potential hazards.

Emission of electromagnetic interference

The emission of interfering electromagnetic fields from newly installed equipment shall not exceed Class A according to ČSN EN 55032 ed.2, from permanently operated monitors it shall not exceed Class B.

Resilience to electromagnetic interference

The control system must be sufficiently resilient to electromagnetic interference that shall occur in the installation space, including interference resilience to the use of portable FM and GSM transmitters of up to 5 W at a distance of up to 0.5 m from the device. Therefore it must be constructed from the elements eliminating interference - galvanic separation for components powered from other sources, consistent shielding of all components, preference of optical data buses, etc.

Process safety

SKŘ shall be designed and supplied in a manner limiting the risks arising from the process. All necessary precautions must be taken to prevent potential failures of equipment supplied within the WORK scope creating hazards for staff, equipment and surroundings either directly or as a result of error impacts on controlled technology during its start-up, normal operation, planned shutdowns, emergency shutdowns and outages .

4.3.5.12 SKŘ POWER SUPPLY

To power the new SKŘ equipment, the supplied UPS shall be used (see PS 11). The power supply shall be 230 V AC and 24 V DC.

Power supply requirements:

- any failure of the system powering SKŘ shall not cause any problems in the controlled technology and there will be no changes in the positions of the actuators,
- all components of the system shall be powered so that any instrument can be replaced during operation at any time without having to disable other parts of the system,
- the power supply units shall be of modular design and shall have easily accessible and easily (without the need for tools) replaceable security features (fuses)
- the diagnostics of the power supply system shall be part of the diagnostics of the entire control system.

4.3.5.13 FIELD INSTRUMENTATION

General

The field instrumentation includes the supply of all complete measuring circuits needed for monitoring and automated technology control supplied by the CONTRACTOR, including all related and assembly components such as welded-on pieces, wells, counter-flanges, sampling valves, condensing vessels, separating vessels, impulse piping, power supply sources, transducers to 4-20 mA signal, etc., including throttles for installation in piping, inlets and outlets of auxiliary media, etc.

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It also includes the supply of all sampling and measuring points including final assembly devices required for the GUARANTEE MEASUREMENTS and verification measurements (i.e. curtains, thermowells, pressure sampling, etc.).

The field instrumentation shall be supplied in such scope and manner that all manipulations that do not require on-location supervision can be performed from the operator stations and that all the variables to perform operational and balance calculations are provided.

Local display devices shall be supplied if their installation is required by special regulations (so-called legal compliance measurements), and wherever their installation is necessary or appropriate for checking the function of the equipment during maintenance and routine checks. Local display devices with an analogue scale of circular shape shall have a minimum diameter of 100 mm.

For remote sensors, the unification of instrumentation is required, meaning that for the same type of measurement sensors from several manufacturers shall not be used.

Unless prohibited by fundamental reasons, analogue pressure and differential pressure sensors with a standard 4-20 mA output signal, with HART configurable protocol and equipped by a display shall be used for the main process technology. It is also possible to use pressure and temperature sensors with a fixed range and output of 4-20 mA on lower level process technological units.

The temperature sensors on the main technology shall be preferably equipped with 4-20 mA integrated transducers installed directly in the sensor heads, configurable by the HART protocol.

The CONTRACTOR shall design and document the length of the calibration times for each element of the measuring chain. It is required that the length of the calibration period shall not be less than 1 year.

Number of sensors

In the whole system, the principle of a single source of information, i.e. the use of signal from one sensor or the resulting verified signal from multiple sensors of one measured quantity for all system functions (sequential and continuous control, protection, archiving, etc.), must be applied. The number of sensors for individual measurements shall be designed by the CONTRACTOR with respect to the safety and reliability of the WORK operation.

Analogue sensor power supply

Sensors that do not require external power supply (such as analyzers, etc.) shall be powered using the test loop from the control system.

Sensors diagnostics

For all sensors, diagnostics shall perform two basic functions:

- to inform both the maintenance and the operator about the correct or incorrect operation of the sensor and its accessories,
- in the event of an incorrect operation, prevent the fault from spreading to the control circuit and further into the technology.

In case of uncertainty or loss of signal, RS must prevent the actuation of protection, back-ups and automatic instructions in the binary control circuits.

Measuring transducers

The measuring transducers shall work with a precision ensuring that the accuracy of the entire measuring chain (excluding the primary throttling devices for flow rate measurements) is better than 0.5% of the set range, also regarding non-linearity, hysteresis and reproducibility.

Sensors and pressure transducers shall work with an accuracy better than 0.3% of the measured range.

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The transducer output shall not be grounded so that the signal line can be grounded uniformly (in the control system switchboard) to avoid additional errors.

Each transducer shall have its own, sufficiently robust housing protecting from harmful ambient influences and shall be mounted so that ambient vibrations do not affect its accuracy and reliability.

All instruments must be designed to operate under conditions of use and must be protected against specific external influences such as weather conditions, vibration, atmospheric corrosion, and similar.

If the transducer shall be placed in an environment with the possibility of freezing temperatures, the instrument must be sufficiently dimensioned for low temperature and secured against freezing, including the respective impulse piping. The robustness of the sensor design must match its location. If high temperature occurs in the space with instruments or cabling, it is also necessary to adapt the instruments and cabling.

Requirements for measurement connections

For each measurement of process technological parameters a sampling point must be provided (i.e. for example, a throttle for flow rate measurement with two sensors, each with a sampling point). Splitting can only be used in exceptional cases where two sampling points are not possible on the device.

The impulse piping (if supplied) must be dimensioned to meet the mechanical strength and stress requirements. Double separation, simple connection and drainage is necessary to ensure normal maintenance.

The dimensions of the impulse piping shall be selected from the standard.

The sampling piping shall be made of class 17 stainless steel.

The material and surface treatment of the impulse piping, shut-off fittings, and all connecting and auxiliary material shall be in accordance with the type of media to be measured and the surrounding environment to ensure corrosion protection and tightness of joints.

The basic requirement for minimizing the number of joints must be observed during assembly. Additionally, where there is mutual movement (due to the operation of the equipment) of the sampling point and the transducer, it is necessary to install attenuation loops (simple or double) during assembly.

Sampling points for measurements, sensors, transducers, and valves shall be installed to provide easy access, or possibly with an access walkway or ladder.

The impulse piping must be designed so that the measuring device can be disconnected without disconnecting or discharging the impulse piping using separation, test and metering valves.

The layout of the impulse piping must allow for easy disconnection of the measuring transducer for repair.

The impulse piping must have a minimum gradient of > 8% to allow air or gas bubbles to rise to the bleeder valve, and liquid or solid sediment to descend into the drain chamber. Generally, the pipeline gradient must increase with the viscosity of the media.

Impulse piping for differential pressure measurement must be kept mutually as close as possible to suppress ambient temperature impact. Piping diameter must be the same throughout the length from the sampling point to the sensor.

For all balancing measurements and verification of parameters (also chemical), a connection for a test instrument shall be provided. The connection must be threaded M20x1.5.

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To measure temperature for the validation measurement, a separate well of the same immersion shall be provided as the operating measurement, extending above the insulation and with a cover to prevent contamination.

Each pressure sampling point on the process technology shall be terminated by a fitting (for pressures from 10 MPa doubled).

Ranges of measuring strings

Unless otherwise explicitly stated, all measuring transducers shall provide a functional trend of increasing output signal with an increasing measured quantity.

The measuring strings (signal sources, sensors, transducers) shall be designed so that the nominal value of the measured quantity corresponds to about 60% of the measuring range (the requirement does not apply for electrical measurements).

The measuring strings (signal sources, sensors, transducers, control system input parameterization) shall be designed so that even at maximum operating values of the measured quantity (e.g. starting currents of motors, operating voltage higher than nominal), no error message in the measuring circuit is reported by the control system (input value outside the allowed range).

Temperature measurements

Remote temperature measurements shall be made by thermoelectric and resistance thermometers.

Resistance thermometers Pt 100 (TR) shall, depending on the installation (design with a thermowell or to a thermowell) be "with higher mechanical resistance" (shock-resistant). Configurable transducers with HART protocol shall be used at 4-20 mA. The location of the transducers shall depend on the location of the thermometers, but preferably in the sensors' heads.

The thermocouples used shall be of the type J (Fe-CuNi) or type K (NiCr-Ni).

For direct measurement of temperature, mercury-filled instruments must not be used and must be of a stainless steel design. It is also not allowed to use glass thermometers.

Pressure and pressure difference measurements

The sensors must allow remote calibration from ŘS by the HART protocol.

In exceptional cases for low-pressure measuring points where only binary signal is required, contact sensors may be applied.

Pressure measurement gauges on pressure vessels must bear the mark with the maximum operating pressure.

Quantity measurements

Quantity shall be measured by a suitable primary element (e.g. a throttle, velocity probe, vortex, etc. ...), HART protocol configurable differential pressure transducers to a unified signal followed by mathematical processing in the downstream control system (extraction and integration, or possibly pressure and temperature correction). In justified cases, a solution is also possible using independent mathematical members with an output to ŘS. Transducers of the quantity measurement sensors must be configurable by the HART protocol directly from ŘS.

The selection of the throttle arrangement for water and steam quantity measurement (point or chamber aperture according to the measuring point parameters) shall depend on the required measurement accuracy. The measuring apertures shall have class 17 stainless steel discs.

For possible indication of lubricating oil and cooling water flow rates for the individual devices, binary flow indicators may be used in justified cases.

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Each raw material or product silo shall be equipped with analogue and limit level sensors.

General requirements for incorporating primary elements into pipelines

To ensure the maintenance of primary elements, sufficient space must be left at the primary element installation point for possible inspection or replacement of the primary element.

Each primary element and shut-off fitting must be accessible from access spaces or platforms.

For the placement of a primary element, equal lengths must be provided before and after the primary element as prescribed by the standard or by the device manufacturer, reducing the straight length is not allowed without the approval of the PURCHASER.

In cases where clogging of the measuring part is anticipated and the measuring point allows it, the measurement shall be positioned so that it can be cleaned without disassembly.

In order to prevent damage to the primary element, it must be designed so that it can be removed from the pipeline before flushing and be replaced by a spacer. After completion of the tests, the spacers shall be dismantled, uniquely identified by their position and handed over to the PURCHASER for further use.

Level measurement

For sensors operating on the principle of differential pressure measurement, the requirements stated in section "Pressure and pressure difference measurements" above are applicable. Transducers with 4-20 mA current output with remote calibration possibility (HART) shall be used. Exceptionally, limit state sensors with a switching contact can be used. Local water gauges shall be of the reflective glass design, or the clear visibility of the actual liquid level shall be ensured in a different manner.

Measuring levels in liquid storage vessels

The supplied storage vessels shall be equipped depending on their size with an appropriate number of suitable level sensors for continuous and limit level sensing. Data on levels shall be fed into the control system from the evaluation units.

Contact sensors

Contact sensors for measurements can be used only in justified cases.

The two-state sensors used shall be of such type and contact design that they can be connected directly to the RS automation circuit without the need for a transfer relay or other additional transducers. The use of switching contacts is preferable to enable diagnostics from the control system. Contacts shall be powered from the control system.

All contact sensors used to measure physical quantities and positions shall conform to the environment where installed.

Measurement of electrical quantities

The measurement of electrical quantities used for process technology control shall use electrical transducers placed in the electrical equipment switchboards, which shall be a part of electrical equipment supply.

4.3.5.14 CABLING

The requirements wiring and cabling design are provided in Chapter 4.3.4.22.

4.3.6 EMISSION SYSTEM MONITORING

The CONTRACTOR shall supply independent emission measurement monitoring systems.

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The automated emission measurement monitoring system (AMS) shall provide a continuous emission measurement that will continually measure the mass concentration of pollutant emissions discharged from TKY II during the calendar year. The results of continuous emission measurements shall be in the scope and manner established by Act No. 201/2012 Coll. and Decree No. 415/2012 Coll. continuously recorded, evaluated and stored. The data collected by continuous measurements shall be protected against alteration and shall be provided in the form specified in Decree No. 415/2012 Coll.

The following continuous emission measurement systems shall be installed:

- measurement of emissions exiting the absorber (wet stack) required by legislation (CO, NO_x, SO₂, TZL) and Hg emission measurement, the analyzers shall be located in the new substation (SO 03) building;
- measurement of emissions at each boiler output after LF (dry stack) required by legislation (CO, NO_x, SO₂, TZL) and one measurement of Hg emissions common to all boilers, the analyzers shall be located in the existing analyzer room at the bottom part of the stack;
- operational measurements at the absorber input (CO, NO_x, SO₂, TZL), the analyzers shall be placed in the new substation (SO 03) building.

Measurement of flue gas flow rate and O₂ content at the outlet of each LF and at the absorber outlet shall also be part of the emission measurements.

All sampling points shall be equipped with sampling flanges for one-off and validation emission measurements.

Probes, sensors and instruments used for emission monitoring shall be placed in a separate box. The location of the sampling points shall be chosen for measurement accuracy with respect to the required straight length of the flue gas duct before and after the sensor. Measurement information shall be recorded and transmitted to the existing boiler emission monitoring evaluation system.

The measured values and diagnostic data shall also be transmitted to DCS.

The emission monitoring system shall be powered from the UPS. The measurement system must be equipped with calibration devices.

More detailed requirements for the individual monitoring system emission measurements are provided in Amendment D01.

4.3.7 COMMUNICATION SYSTEMS

4.3.7.1 VOICE AND DATA COMMUNICATION

The CONTRACTOR shall propose location of telephone sets and data sockets in the desulfurization premises

The telephones shall be connected via separate lines to the existing telephone exchange.

A switch shall be placed in the desulfurization building, to which new data sockets shall be connected. This switch shall be connected to the existing UE switch via an optical cable.

The existing telephone exchange and the existing switch are located in the server room (see Amendment D05).

4.3.7.2 ELECTRICAL FIRE ALARM SYSTEM

The electrical fire alarm (EPS) shall be designed by extending the existing EPS exchange LITES MHU111.

Newly constructed buildings shall be equipped with automatic fire alarms. Push button fire alarms shall be located on the escape routes.

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The fire alarms shall be connected to the existing EPS exchange.

EPS system concentrators are located in Building no. 33 Warehouse of small spare parts, the exchange LITES MHU111 itself is in Building no. 30 Fire station.

5. OPERATIONAL REQUIREMENTS

5.1 OPERATIONAL ENVIRONMENT

In the spaces inside the buildings, the external influences (external influences protocol) must be determined by the CONTRACTOR according to ČSN 33 2000-5-51 ed.3 and the corrosive aggressiveness of atmosphere according to ČSN EN ISO 9223. The supplied equipment must be delivered in a design corresponding to the environment .

Equipment that is not located inside of buildings must be of the outdoor design version.

5.2 OPERATION PERSONNEL

A continuous operation is assumed.

For one shift, the following number of staff is assumed:

Position	Number per shift
Operator	1
Current shift foreman (STK)	1
Occasional walk around service person	1

This personnel must be able to operate the desulfurization in all modes of operation including start-up and shutting down the desulfurization.

The design of the WORK and character of process equipment automation must match this requirement.

5.3 OPERATING MODES

5.3.1 NORMAL OPERATION

The normal operating mode shall include all operating states including dynamic changes in the output of the boilers.

In the normal operating mode, the equipment must be able to operate in fully automatic mode while complying with the parameters of the products and with emission limits.

The equipment must achieve this performance at both maximum summer temperatures and minimum winter temperatures and over the entire boiler power output range.

The desulfurization products will be certified by the PURCHASER. Certification is assumed for the following products:

- Stabilizate with ENGS at production 0% ENGS
- Stabilizate without ENGS at production 100% ENGS
- Stabilizate without LF fly ash (at ash production from LF)

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- Energo gypsum (ENGs)

The preferred use of stabilizate is for embankments and backfills in the construction of roads and for embankments and backfills in strip mine spoil dumps.

The assumed initial composition of the mixture for the stabilizate product is shown in the table.

Assumed percentage shares of stabilizate mixtures - indicative formula:

Mixture	Ash	Lime	Energo gypsum (product purity $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ cca 95%)	Dry matter	Mixture water (min)	Min. stabilizate moisture content Stabilizate/Dry matter	Min. stabilizate moisture content* water/(dry matter + water)
A	83.2%	3%	13.8%	100%	11.3%	1.113	10.2%
B	80.8%	3%	16.2%	100%	13.3 %	1.133	11.7%

* The minimum stabilizate moisture content is indicatively defined as the minimal moisture with respect to the water supplied in the energo gypsum suspension, it can be assumed that higher moisture content values (in the 20% range) shall be required based on processing tests.

To design the process technology and actual balance flows, it is important to adhere as much as possible to the assumed formula, respectively to comply with it. The deviations must be discussed at the design and implementation stage.

In the design and implementation stage the CONTRACTOR must also take into account the following facts and adequately dimension the elements of the supplied technology:

- The production of stabilizate is campaign-based (see the description above). The retention/storage volumes of the stabilizate components must be dimensioned accordingly.
- The production of the stabilizate must be uninterrupted (continuous) up to the maximum capacity of the mixer (i.e. up to 200 t/h of the dry component). An interruption is accepted only at the operator's discretion, on the basis of a safety or blocking signal, or when swapping the operation of individual mixers.
- During the continuous production, a continuous supply of all components, especially lime, must always be ensured in order to achieve the target (set) formula.
- All control elements for the individual components must be capable of efficient regulation (or co-regulation) so that the output quantity can be influenced in the range 30-100%.
- The ash flux (main component of the formula) is not stable. The main control signal for the formula is therefore assumed to maintain the ash mass flow, i.e. the regulation of the other components of the formula to be effectively set and dosed to achieve the required formula.
- The production of the stabilizate shall allow for an optional adjustment of the output (required) moisture content of the mixture in the range of - 15% to + 20% of the initial formula.
- In supplying water to the stabilizate mixture, the following requirements shall be reflected as much as possible:
 - Saline water is fed by the existing route directly to the stabilizate, raw water as process water for the wet scrubbing technology. Water addition (according to formula) to the stabilizate is provided primarily by saline water and is supplemented by water from the wet scrubbing technology.

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- Saline water is preferably used as a process water in the wet scrubbing technology, possibly supplemented by raw water. Water addition to stabilizate (formula) is ensured primarily by water from the wet scrubbing technology and is supplemented by raw water directly from the water system to the stabilizate.
- All options must be appropriately controlled.
- It is always preferable to use the saline water within the above mentioned operating modes so that no waste is generated.
- Water delivery to the stabilizate mixture will be implemented (enabled) in several ways based on the operator's decision.
- When producing stabilizate with energo gypsum, part of the water to wet the mixture will be delivered within the gypsum suspension. The remaining part of the water for the formula will be supplied from the water system or if convenient, via the scrubbing technology. The CONTRACTOR shall monitor the balance of all water consumption (wet scrubbing technology and stabilizate production) and water consumption for the formula delivered via the gypsum suspension for the assumed default formula.
- In the production of stabilizate without energo gypsum (i.e. with the shipping of the energo gypsum in a dry state), water shall always be used to avoid waste. The CONTRACTOR shall thoroughly monitor the balance of all water consumption (wet scrubbing technology and stabilizate production) and water consumption for the formula delivered directly from the water system and through wet scrubbing technology for the assumed default formula.
- Deviations in the formula resulting from the variable amount of energy gypsum produced or respectively the supplied gypsum suspension will be balance checked for water consumption and must be approved.
- Formula variations resulting from the variable amount of ash supply (low power output, fuel change, separation of the LF ash component from the total ash production) shall be balance checked and specified as limit values at which the consumption of saline water will be ensured.
- The PURCHASER reserves the right to specify the moisture content of the mixture and composition in more detail during project preparation based on research conducted.
- The shipment of the dewatered energo gypsum shall be conducted in campaigns, with the basic assumption of shipment in the same period as the agglomeration operation. The shipment mode will correspond to the technology retention quantities for wet and dry state. With regard to the requirements of the quality of the energo gypsum, waste free technology and the options of supplying water to the stabilizate, process modes of water supply (saline or raw) and the provision of stabilizate wetting shall be assessed and specified. The permanent shipment of energo gypsum without the parallel production of the stabilizate is not anticipated in the long term. The permanent shipment of energo gypsum with parallel production of the stabilizate (see above and chapter 1.5.6) may be anticipated.
- The dewatered energo gypsum shall be produced in the quality matching the standard of the so called FGD Gypsum (issued by EURO GYPSUM) while using the Type 1 limestone (chapter 1.8.1 – measured value).

Constituent/indicator	Unit	Value	Note
CaSO ₄ x 2H ₂ O	% mass	≥ 95 %	Dry
CaSO ₃ x 1/2 H ₂ O	% mass	≤ 0.5	Dry
MgO	% mass	≤ 0.1	Dry
Cl	% mass	≤ 0.01	Dry
Na ₂ O	% mass	≤ 0.06	Dry

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Moisture content	% mass	<10	Original
ph	-	5 to 9	

Additional requirements: non-toxic, odorless, white color.

5.3.2 START-UP

Start-up of the key desulfurization equipment nodes (absorber, limestone suspension preparation, etc.) shall be possible in an automatic mode.

5.3.3 SHUTDOWN

Desulfurization shutdown shall be possible automatically in the following modes:

- For planned hot restart,
- For planned inspection or repair (cold state).

Desulfurization shall also be automatically shut down by protective systems in the event of non-standard states.

5.3.4 EXCEPTIONAL CONDITIONS

Operation of desulfurization in case of power supply failure

In this case, it is required to ensure shut down the desulfurization and to ensure the operation of important equipment (mixers, etc.) by supplying power from the diesel generator.

Winter operation

The desulfurization system must operate safely and reliably even at low outdoor temperatures, i.e. there must be no device failures due to freezing of the equipment in winter. Therefore, the WORK design must include measures to enable the operation of the equipment at low temperatures without extraordinary measures such as the installation of mobile heating units.

These measures must also be sufficient to maintain the equipment at low temperatures for a longer periods of time in a shutdown but operable state.

All exterior flaps and fittings shall be made with regard to their use in winter months to prevent their immobility.

All flue gas duct flaps shall be made for use in the flue duct with respect to the presence of fly ash when the LF bypass is started.

6. MAINTENANCE REQUIREMENTS

6.1 BASIC REQUIREMENTS

All equipment shall be designed, built and installed to ensure the equipment availability within the meaning of Supplement 2 to the CONTRACT and so that its maintenance is simple, safe and as economically viable as possible, implementable by procedures in accordance with the Czech legislation, respecting specific conditions and time constraints for maintenance of the individual devices, and not creating risks for the availability and safety of desulfurization operations.

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Therefore, procedures and resources shall be extensively applied in designing of the WORK to simplify and reduce maintenance costs and to achieve short repair times consistent with the equipment reliability requirements.

These procedures and resources shall include in particular:

- Use of maintenance-free equipment with minimal requirements for physical inspection and maintenance (e.g.: self-lubricating pump bearings, ceramic seals, etc.).
- Limiting the number of devices with service life less than the total service life of the WORK. Their renewal must be possible within the terms corresponding to the required scheduled repairs.
- Unification of technical components ensuring the same functions, limitation of spare parts assortment, substitutability of components.
- Utilization of on-line diagnostics of process equipment such as the evaluation of temperature stresses on critical components, evaluation of lower than dew point temperature occurrences, etc.).
- Extensive and automated on-line internal diagnostics of the electronic systems including on-line verification of measuring circuits.
- Long-term monitoring and evaluation of the state of the equipment based on results of the measured data, diagnostic information, machine operating hours, off-limits operation time, etc., allowing preventive maintenance planning based on measured values and trends, and to determine the time and extent of routine repairs.
- The design of the WORK must exclude, respectively limit the need for the use of non-standard failure finding and troubleshooting techniques to a reasonable minimum.
- Equipment shall be designed to minimize human labor and maintenance time.
- In electronic systems it must be possible to replace the defective component while the corresponding redundant part is active. Modular solutions are required so that repairs can be performed by replacing faulty modules in operation without having to turn off the power supply.
- The WORK must be designed and implemented in such manner that regular maintenance requiring equipment shutdown can be carried out at scheduled shutdowns of the process technology.

6.2 EQUIPMENT DIAGNOSTICS

The CONTRACTOR is required to design a system for critical equipment diagnostics and a method of indicating limit values for making decisions on equipment maintenance requirements. The supply of the diagnostics is subject to approval by the PURCHASER.

The control system must inform the operator in time about the malfunction of the equipment or changed operating parameters such as temperature, pressure, flow rate, concentration, etc.

6.3 LIGHTING REQUIREMENTS

Devices requiring regular access for routine testing or maintenance must be sufficiently illuminated or fitted with built-in lighting (cabinets and switchboards). For work inside the device, a portable light with its own power supply must be provided (supplied) with a built-in rechargeable battery, or a power supply socket must be available in close proximity. The design and electrical covering must correspond to the environment (external effects) in the area where the light shall be used. However, fixed lighting is preferred.

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6.4 WORKER SAFETY

The WORK shall further be designed so that when carrying out maintenance, persons and property are not endangered, especially in order to:

Secure the equipment against undesired interference.

Provide equipment with potential hazardous gases presence with the capability for flushing with sufficient quantity of air or inert medium.

Inform the operator that the parts of process equipment are being shut off (e.g. for testing or repair purposes).

Double the installation of safety fittings where replacement is anticipated during operation and equip them with a mechanical locking system that will not allow both fittings to be closed at the same time. Keys to the locking device must be stored outside the normal reach of the operator (e.g. in a lockable box in the control room).

All uncovered rotating parts (such as pump couplings) and hot surfaces (above 50 °C) within the operator's reach must be provided with removable covers that will not allow touch or tangling of the operator.

In the event of personnel being exposed to chemical agents, or when eye-washing is necessary, first-aid kits shall be available at accessible locations, subject to all health and safety policies. The showers and washbasins are part of the equipment for the machine operators' facilities. No special rinsing points are being considered.

Passages and corridors must have a clear height of 2.1 m minimum.

All premise must have marked escape routes in the form of lines on the floor, and these routes must be illuminated by emergency lighting even in the event of a power outage.

The operating voltage used in the equipment shall be such as to substantially reduce the likelihood of an electric shock. If exceptions are necessary, they must be substantiated and described in the technical maintenance procedures.

The maintenance and repair procedures must respect all safety-related regulations and restrictions resulting from applicable standards and regulations.

6.5 ACCESS REQUIREMENTS

Providing access routes and service structures for the equipment supplied within the WORK scope (passages, ladders, platforms, etc.) required for the operation and maintenance shall be a part of the WORK scope.

All parts of the WORK requiring operating manipulations or maintenance, must be accessible for operation and maintenance without the use of temporary structures (ladders and scaffolding).

This applies, among other, to the roof and stack installations and to the HVAC control units located under the ceiling.

6.6 TRANSPORTATION REQUIREMENTS

Sufficient capacity access roads shall be provided to allow the transport of special equipment, accessories and spare parts necessary for the maintenance and repairs of the equipment, including necessary transport packaging and means of transport to the place of use or installation.

Data on loading, location of support beams, or equipment anchoring shall be submitted for approval by the PURCHASER at the DESIGN stage.

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The capacity of the individual monorail cranes shall be marked on the rails in yellow color large letters. Stable monorail cranes shall be provided as part of the delivery if the equipment cannot be transported by conventional means (forklift) because of space or weight constraints.

Lifting equipment with load capacity over 1.5 t shall be powered. Control cabinets shall be unbreakable and waterproof.

All lifting equipment must comply with the relevant Czech standards.

For heavy and large-dimension parts assumed to be transported during the installation of new equipment and/or replacement due to a serious failure, such transportation logistics must be developed, that after the completion of the WORK and the eventual related building modifications, the potential replacement of these parts shall not be constrained by the final state of the transportation routes and the lifting capacity of the lifting equipment.

It is required that safe transport and relocation of loads of more than 50 kg and/or with extraordinary dimensions requiring more than one person, is not needed during the standard maintenance operations.

Exceptions not meeting this requirement must be known in advance, the relevant parts must be adapted for such handling and fitted with manipulation handles, auxiliary supporting structures, suspension lugs, storage and transport aids, etc. according to the nature of the load.

6.7 SPECIAL TOOL SUPPLY REQUIREMENTS

The CONTRACTOR shall equip PURCHASER'S maintenance by all special tools.

The manner of using the special tools shall be a part of management, operation and maintenance staff training and shall also be described in the maintenance work procedures.

Special tools shall be delivered in suitable, durable packaging including workflows and PTD for its checks and maintenance.

6.8 SPECIAL INSTRUMENTATION SUPPLY REQUIREMENTS

The CONTRACTOR shall equip the PURCHASER'S maintenance workplaces with all special instrumentation.

The supplied instrumentation shall be designed and constructed so that checking its technical characteristics is feasible with standard equipment without any doubt as to the correctness of the result.

The reliability characteristics of this instrumentation shall be higher in the prescribed mode of use than of the comparable supplied parts of the maintained equipment.

The supplied instrumentation equipment jointly with standard instrumentation shall enable all maintenance workflows to be carried out and must enable the full range of tests to be carried out in order to commission and start the equipment supplied within the WORK scope.

The manner of use of special instrumentation supplied by the CONTRACTOR shall be a part of PURCHASER'S management, operation and maintenance staff training and shall also be described in the maintenance work procedures

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7. SERVICE LIFE REQUIREMENTS

General

The PURCHASER assumes three (3) weeks maximum downtime of the process equipment to identify the technical condition of the equipment (routine repair - BO) every year to eliminate the identified defects. Longer outage (overhaul - GO) is assumed every ten (10) years.

It is required that the equipment operates without replacement of the decisive machines and equipment for at least 20 years, when operating desulfurization for about 8,136 (in the first year) and 8,256 (in the second and subsequent years) hours/year.

The desulfurization plant must be designed so that:

- parts that can be repaired or replaced only during GO have a service life of at least 84,000 operating hours;
- bearings, coolers, working elements of rotary machines (excluding suspension) in machines with an output exceeding 25 kW have a service life of at least 60,000 operating hours;
- parts with service life of more than 16,000 operating hours have a service life of at least 26,000 operating hours (replacement at each third BO);
- parts with service life shorter than 9,000 hours shall be repaired or replaced during operation.

Material quality, construction and design, dimensioning of individual equipment items and its components, internal corrosion protection where necessary, and other measures must meet these requirements.

Civil part

Supplies for construction, parts of buildings, structures and products must meet the basic requirements of the Government Decree No. 163/2002 Coll. Determination of technical requirements for selected construction products (Annex No. 1), as amended, by Government Decree No. 312/2005 Coll. within the meaning and in accordance with Act No. 22/1997 Coll. on technical requirements for products, as amended, and related implementing decrees.

Fabric filter

The service of the filter hoses shall be at least 24,000 operating hours while complying with the limit of 7 mg/Nm³.

Flue gas scrubber, rubberized parts or parts protecting the absorber internally

The service life of this equipment shall be at least 24,000 operating hours.

Fans

The ID fan impeller shall have a service life of at least 84,000 operating hours.

The fan bearing service life of at least 40,000 operating hours at nominal loading is required.

Pumps and mixers

Larger size ball and roller bearings of pumps and mixers and pump impellers must have a service life of at least 60,000 operating hours at nominal loading.

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8. FIRE PROTECTION REQUIREMENTS

8.1 GENERAL PRINCIPLES FOR FIRE SAFETY DESIGN

The DESIGN shall, among other, include a summary report with a PBR section. The documentation for the individual SOs, as well as for PSs, must include a PBR section processed according to regulation No. 246/2001 Coll.

The PURCHASER requires that the CONTRACTOR proposing the WORK does not assume the presence of the company Fire Brigade/Rescue Service (JHZSP) at the plant premises, although such outfit is currently present on the site. This relates to the process technology proposed and to all the stages of the process design in the respective sections concerning the fire safety design.

Requirements for the fire safety design of the WORK are part of Supplement 01.

9. HEALTH AND SAFETY PROTECTION REQUIREMENTS

The CONTRACTOR shall eliminate as much as possible any risks arising from the process. The process must be safe and all necessary precautions must be taken by the CONTRACTOR to eliminate any hazards to personnel, equipment and surroundings during the commissioning, normal operation, planned shutdowns, emergency shutdowns and outages. Venting systems shall address safe discharge of released gases or vapors.

The desulfurization plant shall be designed and implemented by the CONTRACTOR in accordance with the applicable safety regulations, regulations and ČSN standards, as amended. Also, all desulfurization operations shall be carried out in accordance with these regulations, decrees and standards.

In the design and during implementation, all effective OHS ordinances and regulations for specific work and activities must be taken into account and respected (especially the ČÚBP Decree No. 48/1982 Coll., laying down the basic requirements for the safety of work and technical devices, in particular Government Decree No. 101/2005 Coll., on detailed requirements for workplaces and work environment, Government Decree No. 362/2005 Coll., on detailed requirements for OHS in workplaces with the hazard of falling from height and to depth and all related other decrees, standards and regulations, as amended by subsequent implementing and amending regulations). The CONTRACTOR is obliged to observe with respect to OHS within the meaning of the Labor Code (Act No. 262/2006 Coll.) and the related Act No. 309/2006 Coll., on detailed requirements of OHS (within the meaning of the EEC Directives) to comply especially with Government Decree No. 361/2007 Coll. establishing conditions for protecting employees at work, Act No. 258/2000 Coll., On the protection of public health (as amended, and in particular Government Decree No. 272/2011 Coll., on health protection from adverse effects of noise and vibrations), Decree of the Ministry of Health No. 432/2003 Coll., establishing conditions for the classification of work into categories, limit values of the biological exposure test indicators and the requirements for reporting work with asbestos and biological agents, and Government decree No. 378/2001 Coll. establishing detailed requirements for the safe operation and use of machinery, equipment, instruments and tools. Increased attention shall be paid to work with electrical and lifting equipment and construction machinery. The operators of this equipment and machines must have the appropriate certifications and qualifications.

The proposed DESIGN shall respect in particular:

- Act No. 258/2000 Coll., on the protection of public health and amending some related regulations.
- Act No. 262/2006 Coll. labor code, as amended, and some other related laws.

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- Act No. 309/2006 Coll., establishing further requirements for health and safety at work in employment relationship and on ensuring the safety and protection of health during the activity or provision of services outside of the employment relationship (Act on other occupational health and safety conditions).
- Government Decree No. 591/2006 Coll., on detailed minimum requirements for safety and health at work on construction sites.
- Government Decree No. 272/2011 Coll., on health protection against adverse effects of noise and vibrations.
- Government Decree No. 361/2007 Coll. laying down the conditions for the protection of health at work.
- Government Regulation No. 375/2017 Coll., on the appearance, location and design of safety signs and markings and signal definition.
- Government Decree No. 495/2001 Coll. laying down the scope and detailed conditions for the provision of personal protective equipment, washing, cleaning and disinfecting means.

Earth work and excavation work, carried out in close proximity to underground electrical utilities, must be carried out only manually. Work with machinery must be adapted to the applicable safety regulations and regulations, especially in the vicinity of live electrical equipment.

The demolition must be carried out so that the stability of the building or other structures in the immediate vicinity and the operability of the utility networks in proximity of the demolition work is not compromised, work shall be performed according to a prearranged detailed technological procedure, taking into account the survey of the actual state of construction in accordance with the MMR Decree No. 499/2006 Coll., including all other related and subsequent amendments to laws, decrees, or implementing regulations.

Worker safety

Further, the WORK shall be designed to:

- secure the equipment against accidental undesirable interference,
- equipment with potential hazardous gases presence must allow flushing with sufficient quantity of air or an inert medium.
- all rotating parts (such as pump couplings) and hot surfaces (above 50 °C) within the operator's reach must be provided with covers that will not allow touch or tangling of the operator,
- in spaces where chemicals are used or where leakage of chemicals may occur in some parts of the installation, safety showers with eye flushing (according to type operation) must be installed,
- escape routes required by fire regulations must be marked in all spaces.

At the same time, the related requirements provided in Amendment D01 of Supplement 1 to this CONTRACT must be respected

10. TESTS AND COMMISSIONING

10.1 GENERAL

The CONTRACTOR shall prove and demonstrate the required performance and quality of the WORK by inspections and tests that shall be carried out by the CONTRACTOR, its SUB-CONTRACTORS, at the manufacturer's premises or at the CONSTRUCTION SITE.

These inspections and tests shall include in particular:

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- Inspections and tests for acceptance of material and sub-deliveries of mass-produced equipment.
- Inspections and tests during production of individually manufactured equipment.
- Inspections and tests of finished products – FAT Factory acceptance tests.
- Inspections and tests of the civil part.
- Inspections and tests at acceptance for assembly.
- Individual tests (IZ) during at mechanical completion.
- Inspections and tests during commissioning i.e.:
 - Preparation for complex testing.
 - Complex testing, TEST "A".
 - Performance test.
- TEST "B" (prior to FINAL ACCEPTANCE of the WORK).

All inspections, tests and trials performed in connection with the preparation and implementation of the WORK shall be conducted in accordance with the Inspection and test plan, Test program, Commissioning plan, Guaranteed parameter test plan and other related quality documentation prepared by the CONTRACTOR in accordance with the CONTRACT, Section 27 of the CONTRACT and Supplement 3 to the CONTRACT.

Concurrently, other conditions of the CONTRACT relevant to the testing shall be complied with, encompassed in particular in:

- Section 27 of the CONTRACT - Ensuring the quality of the WORK
- Section 28 of the CONTRACT - Execution and mechanical completion
- Section 29 of the CONTRACT - Commissioning
- Section 32 of the CONTRACT – Guarantee measurements under TEST "B", Final Acceptance of the WORK

The scope, execution and quality of the tests shall at least correspond to the requirements specified in the relevant standard for the equipment concerned. The number of the relevant and valid standard shall be provided in the accompanying documentation of the relevant tested equipment.

If the equipment shall be tested according to standards other than ČSN, these standards shall be submitted by the CONTRACTOR before the tests start.

10.2 INSPECTIONS AND TESTS FOR THE ACCEPTANCE OF MATERIAL AND SUB-DELIVERIES OF MASS-PRODUCED EQUIPMENT

These are inspections and tests at the acceptance of material and mass-produced equipment performed by CONTRACTOR'S procurement according to the approved procedures specified in the Plan of inspections and tests for acceptance of material and subcontracted deliveries, related test programs, technical conditions, and others.

The acceptance procedures shall include verification of material data sheets and certificates of the purchased material and equipment demonstrating compliance of these materials and equipment with specifications, standards and regulations, and further the quality and method of packaging and storage of individual parts of the equipment.

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Records generated in connection with SUBCONTRACTOR assessment and procurement are considered to be quality records. These include, in particular, reports from external audits, records of inspections performed by the PURCHASER, protocols on equipment acceptance at SUBCONTRACTORS, inspection and test reports.

10.3 INSPECTIONS AND TESTS DURING PRODUCTION OF INDIVIDUALLY MANUFACTURED EQUIPMENT

These are workshop tests and inspections carried out by CONTRACTOR, its SUBCONTRACTOR, or possibly the manufacturer of the equipment in the various production stages of production according to the Inspection and test plan for the manufacture of the relevant equipment and the follow up test programs.

Inspections and tests during manufacturing include in particular:

- Material tests including material certificates.
- Semi-product certificates.
- Dimensional certificates, tolerances.
- Inter-operational dimensional checks.
- Functional tests to check the functionality of the individual parts (where possible).
- Dynamic testing of rotary machines.
- SKŘ component tests.
- Electrical equipment tests.
- Prescribed tightness tests.
- Weld quality inspections.

10.4 INSPECTIONS AND TESTS OF FINISHED PRODUCTS - FAT

Inspections and tests of finished products are factory tests that are performed at the manufacturer after completion of the production and assembly of the equipment prior to its shipping in accordance with the Inspection and test plan of finished products and FAT and the follow-up test programs.

At the conclusion of these tests, before delivering the equipment to the CONSTRUCTION SITE the CONTRACTOR shall perform the Factory Acceptance Test (FAT) to demonstrate the functionality of the equipment (where possible) and its compliance with standards and specifications.

Before starting FAT, the equipment shall be fully tested by the manufacturer and all component and device errors shall be removed.

Within FAT, all the inspections, tests and proofs required to verify the quality of finished products shall be carried out, in particular:

- Complete inspection of the equipment according to the approved drawing documentation.
- Quality assurance protocols review.
- Pressure tests at the manufacturer.
- Parameter testing of rotary machines (Q-p diagram, loading characteristics, etc.)
- Checks of material tests execution, including material certificates.

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- Dimension check.
- Prescribed quality assurance tests of rubberized surfaces installation.
- Type tests to confirm the fulfillment of design criteria for each product type. The type test may be replaced by a submission of a test report by an independent testing body and the complete documentation of the tests and their results, on which the report was based.
- Functional testing of complete equipment (where possible). For modular devices and SW-containing devices these are integration tests of complete assemblies including SW.
- Paint coat inspections.
- Other necessary tests and proofs the CONTRACTOR shall use to demonstrate compliance of the equipment with the standards and design criteria specified in the CONTRACT.

10.5 INSPECTIONS AND TESTS OF THE CIVIL PART

For the civil part, the CONTRACTOR shall carry out inspections and tests to verify the building readiness for the follow-up construction activities or for the installation of parts or assemblies of technological devices and technical equipment. The quality management shall be in accordance with ČSN ISO 10005. The CONTRACTOR shall verify by inspections and tests carried out under the civil part Inspection and test plan (see CONTRACT Supplement 03 - Documentation) and the follow-up test programs in particular:

- Shape accuracy;
- Completeness and quality of execution;
- Complying strength characteristics;
- Compliance with the DESIGN.

Inspection and test plan

The CONTRACTOR shall prepare a pre-construction preparation schedule, including time planning and production preparation - creation of operational plans, updating of time schedules according to the actual work performed, including project control.

The CONTRACTOR shall use modern IT resources and specialized SW solutions to create a construction model with maximum integration of derived processes.

The CONTRACTOR shall provide tests especially for the following structures and technological stages:

- Compaction of embankments and structures;
- Piling work and geometric accuracy of piles;
- Adjustment of foundation plane;
- Concrete casting of reservoirs, foundations, sills and other foundation structures;
- Tightness tests and waterproofing or liner barriers;
- Vertical bearing structures;
- Horizontal bearing structures;
- Vertical access structures (elevator shafts, stairways);
- Infill structures;
- Steel structures;

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- Inspection of roofs and perimeter skin;
- Inspection of dividing structure execution;
- Inspection and testing of TZB equipment and distribution systems;
- Inspection of finishing works execution;
- Components supplied shall be accompanied by certificates of conformity.

This inventory is incomplete, the CONTRACTOR must ensure that the inspections carried out are in accordance with the valid legislation of the Czech Republic and the technical standards (ČSN, EN) as amended.

10.6 INSPECTION AND TESTS AT ACCEPTANCE FOR ASSEMBLY

Inspections and tests at acceptance for assembly are tests or inspections to verify the correctness, completeness and technical state of the machines and equipment handed over for assembly and their accompanying technical documentation, and to check whether the equipment has suffered defects during transportation to the construction site, potentially preventing its proper and reliable function. These tests shall be carried out in accordance with the Inspection and test plan at acceptance for assembly and the follow-up test programs.

10.7 INDIVIDUAL TESTS (IZ) AT MECHANICAL COMPLETION

During MECHANICAL COMPLETION, individual tests shall be carried out in accordance with the Inspection and test plan for assembly completion and according to the follow-up test programs, proving quality of the mechanical completion and the readiness of the equipment to be gradually COMMISSIONED.

These tests shall be performed on individual machines or devices separately and without loading. The intact and complete state of the supplied machinery and equipment after assembly shall be tested, the quality of the mechanical completion and the reliable operation of the individual equipment shall be proven, pressure tests and tightness tests shall be performed, and verification that cable connections are functional and properly connected, including checking the direction of movement and status signaling.

Before starting the individual tests, an initial inspection report of the electrical equipment for the entire WORK must be prepared in accordance with ČSN 33 1500 and ČSN 33 2000-6-61 as well as for the other restricted technical equipment according to the relevant valid standards and regulations. Appropriate consultations and cooperation with ITI (Institute of Technical Inspection) and OIP (Regional Labor Inspectorate).

These tests shall include in particular:

- Confirmation that the CONTRACTOR has provided GOODS, SERVICES, documents and certificates in accordance with the CONTRACT as necessary for the proper operation of the facility.
- Physical inspection proving that the equipment is in compliance with the final version of the drawings, the specifications and the latest applicable standards and regulations.
- Inspection of the marking on equipment, instruments, cables, terminals, etc.
- Confirmation that all pipe components within the CONTRACTOR'S supply boundaries are cleaned and flushed to allow operation without clogging or damage to the equipment.

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- Mechanical and hydraulic testing of all piping components and vessels within the CONTRACTOR'S supply boundaries to demonstrate their tightness and that they are clear for operation.
- Testing of cable connections.
- Testing of all individual machinery, measuring and control devices, automation systems, electrical equipment, lifting and handling equipment, including auxiliary equipment, so that they are treated, adjusted, calibrated and ready for normal operation.
- Testing of all shut-off, protective and emergency systems for proper operation at set values.

All co-ordination activities among the other parties participating in the tests shall be provided by the CONTRACTOR.

10.8 INSPECTIONS AND TESTS DURING COMMISSIONING

Inspections and tests during COMMISSIONING shall include:

- Preparation for complex testing.
- Complex testing, TEST "A".
- Performance test.

These tests shall be conducted in accordance with the Inspection and test plan for commissioning and the follow-up Test program and the Commissioning plan.

10.8.1 PREPARATION FOR COMPLEX TESTING

Preparation for COMPLEX TESTING means the inspections and tests carried out to gradually put into operation the equipment of the individual functional units, operation systems and finally the entire WORK.

During these inspections and tests, the verification of functionality of the entire set of equipment supplied within the WORK scope, including mutual functional alignment of these devices and alignment with downstream devices and networks, is performed.

The scale of activation of the technological process in these tests depends on the nature of the particular test and shall be described in the test conditions in the test program.

These tests include in particular:

Testing functions of all machinery, measuring and control devices, automation systems, electrical equipment, lifting and handling equipment, including auxiliary equipment, so as to guarantee the complete functionality of the entire WORK and its readiness for COMPLEX TESTING including verification of the WORK connectivity to the downstream devices and its compatibility with these devices.

These tests shall also include:

- Testing of backup functions and blocking using fault simulation; for all equipment/units (process nodes, SKŘ components or electrical equipment) concerned; automatic backup and operation of the backup device/unit shall be tested and demonstrated, and the correct and timely display of the respective fault message.
- Testing of all shut-off, protective and emergency systems for proper operation at set values.
- Secondary tests of 6 kV substation protection.

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10.8.2 COMPLEX TEST, TEST "A"

For the COMPLEX TESTING, the WORK shall be activated and operated with the respective media.

Technology, electrical equipment, control and management systems shall be fully operational, adjusted, optimized and tested together to function properly in synergy and in conjunction with the downstream equipment.

The COMPLEX TESTING shall also include inspections and tests performed under TEST "A" including:

10.8.2.1 TESTS PERFORMED BY CONTRACTOR

These tests shall be carried out by the CONTRACTOR according to its Inspection and test plan, Test program and in accordance with the Commissioning plan (see Supplement 3 of the CONTRACT) and shall include in particular the following inspections and tests:

By performing TEST "A", the CONTRACTOR shall, inter alia, demonstrate that:

- The supplied WORK meets, in accordance with the CONTRACT, the requirements for start-up, shut down, normal operation, fault condition resolution, etc.
- Additional requirements for the technical design of the WORK provided in this CONTRACT Supplement 1, in particular the requirements for functions, technical parameters, performance, reliability, execution and quality of the WORK, are fulfilled.
- All other tests provided in CONTRACT Supplement 2, not part of the GUARANTEE MEASUREMENTS, shall be carried out.
- All backup devices and automatic backups between master and backup devices are functional.
- The WORK is suitable and ready to start and successfully perform the GUARANTEE MEASUREMENTS.

10.8.2.2 GUARANTEE MEASUREMENTS

GUARANTEE MEASUREMENTS (TEST "A") includes measurements by which the PURCHASER verifies that the WORK fulfills the guaranteed parameters specified in Supplement 2 to the CONTRACT, whose verification is required by TEST "A".

GUARANTEE MEASUREMENTS shall be carried out by an independent third party, as determined by the PURCHASER with the participation of representatives of the CONTRACTOR.

GUARANTEE MEASUREMENTS shall be made in accordance with the Plan of GUARANTEE MEASUREMENTS prepared by CONTRACTOR and approved by the PURCHASER in accordance with the requirements of Supplement 3 to the CONTRACT.

Minor deviations in the operating conditions on the PURCHASER'S side are not a reason for not performing the "A" TEST and shall be evaluated with respect to the guaranteed correction curves that shall be part of the Plan for GUARANTEE MEASUREMENTS.

These guaranteed correction curves determine the impact on the GUARANTEED PARAMETERS Of the WORK (e.g. reagent consumption, electrical energy and SO₂ removal efficiency), at different combinations of input conditions, in particular:

- change in input SO₂ concentration;
- using a certain number of recirculation pumps and the respective nozzles used in operation;

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- at different flue gas volumes;
- at different reactivity of limestone,

The input conditions shall be provided in the guaranteed correction curves ranging from 0 to 110% of the maximum values and further define the operating range.

If all the verification tests prescribed for these GUARANTEE MEASUREMENTS cannot be carried out for reasons not attributable to the CONTRACTOR (e.g. due to unsuitable meteorological conditions), these tests shall be made later in the TRIAL OPERATION, by agreement of the parties.

10.8.3 PERFORMANCE TEST

The COMMISSIONING shall be concluded by a performance test. The basic condition for performing the PERFORMANCE TEST shall be the successful completion of the complex testing and the signing of the completion protocol according to paragraph 29.3 of the CONTRACT.

PERFORMANCE TEST means a continuous, faultless operation of the WORK in duration according to paragraph 29.3 of the CONTRACT under all WORK operating modes.

By the PERFORMANCE TEST the CONTRACTOR proves the operability, reliability, safety and quality of the WORK in accordance with the CONTRACT in the scope and execution specified in the approved Inspection and test plan and in the approved PERFORMANCE TEST program. The CONTRACTOR has an obligation to ensure that the WORK is operated during the PERFORMANCE TEST without any maintenance interventions.

The test shall be carried out by the CONTRACTOR according to its Commissioning plan in accordance with the requirements of Supplement 3 of the CONTRACT.

10.9 TEST „B“

During the twenty-four (24) months of the WARRANTY PERIOD, on a date set by the PURCHASER, selected tests and inspections shall be performed to re-verify that the PURCHASER'S technical requirements have been met in compliance with the CONTRACT.

These tests shall include:

10.9.1 TESTS PERFORMED BY THE CONTRACTOR

These tests shall be performed by the CONTRACTOR according to its Inspection and test plan, Testing programs (see Supplement 3 to the CONTRACT), with particular tests being carried out on equipment where operating difficulties and deficiencies have occurred during the previous period. In this case, they will be comparable to the tests performed in TEST "A".

In addition, tests of properties and parameters of the WORK that may deteriorate during the WARRANTY PERIOD shall be performed.

10.9.2 GUARANTEE MEASUREMENTS

GUARANTEE MEASUREMENTS (TEST "B") includes measurements by which the PURCHASER verifies that the WORK meets the guaranteed parameters specified in Supplement 2 to the CONTRACT, whose verification is prescribed in TEST "B".

GUARANTEE MEASUREMENTS shall be carried out by a PURCHASER authorized independent company or person, with the participation of representatives of the CONTRACTOR.

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GUARANTEE MEASUREMENTS shall be made in accordance with the GUARANTEE MEASUREMENT plan prepared by the CONTRACTOR and approved by the PURCHASER in accordance with the requirements of Supplement 3 to the CONTRACT.

11. DOCUMENTATION PROVIDED BY CONTRACTOR

The requirements for documentation to be provided by the CONTRACTOR as part of the performance of the WORK are provided in Supplement 3 to the CONTRACT - Documentation.

12. USED STANDARDS AND LEGAL AND OTHER REGULATIONS

12.1 GENERAL

The CONTRACTOR undertakes to observe hereinbelow in the following order:

- Valid generally binding legal regulations in force in the Czech Republic, and also
- Applicable harmonized standards ČSN EN i.e. standards relating to the WORK, fully transposing the requirements laid down in an European standard or a harmonization document recognized by the European Community institutions as a harmonized European standard or a European standard which has been established as a harmonized European standard in accordance with the law of the European Communities by a common agreement of the notified bodies, and also
- ČSN Standards provided in Supplement 1 of the CONTRACT.

The use of foreign international or national standards is possible only if their requirements and demands are the same or stricter than those in force in the Czech Republic, subject to the prior approval of the PURCHASER. In the event that the CONTRACTOR uses a foreign standard that has no equivalent in CSN EN/ČSN, it shall submit such a standard to the PURCHASER in English with a translation into Czech, together with the documentation for approval, unless otherwise agreed by the parties.

The CONTRACTOR shall be obliged to submit to the PURCHASER, in connection with proving compliance with the requirements of the generally binding legal regulations, the required standards and the requirements of the WORK quality assurance program, the relevant documents according to this provision no later than ten (10) days prior to the commencement of the COMPLEX TEST according to paragraph 29.2 of the CONTRACT, unless the CONTRACT requires an earlier term or unless otherwise agreed by the parties.

12.2 REQUIREMENT FOR COMPLIANCE OF THE WORK AND ITS EXECUTION WITH TECHNICAL STANDARDS

The CONTRACTOR is required to comply with European and national standards and regulations unless otherwise specified in the project tender documentation specifications.

Hierarchy of standards and regulations:

- Czech technical standards transposing European standards;
- European standards;
- European technical approvals;
- Technical specifications published in the Official Journal of the European Union;
- Czech technical standards;

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- Construction technical certificates.

Technical specifications contained in other publicly available documents commonly used in professional technical practice.

12.3 REQUIREMENTS FOR WORK IMPLEMENTATION COMPLIANCE WITH PURCHASER'S INTERNAL MANAGEMENT DOCUMENTATION

When implementing the work, the CONTRACTOR must comply with the specific requirements for the operation of the heating plant as set out in the internal guidelines of the PURCHASER. The basic document in UE is the guideline SM-UE-1805 "Contractors' Code of Conduct". This guideline addresses the majority of subjects associated with the movement and activities of contractors – external persons in UE (see Annex 11 of the CONTRACT).

13. CONSTRUCTION SITE INFORMATION

13.1 CONSTRUCTION SITE PREPARATION AND DRAINAGE

The entire CONSTRUCTION SITE is located within the existing industrial site of United Energy, a.s.

Prior to the construction work, the CONTRACTOR shall build in the southern part of the CONSTRUCTION SITE the CONSTRUCTION SITE FACILITIES (ZS) including storage and parking areas (south of SO 04).

Roads

To access the CONSTRUCTION SITE, the CONTRACTOR shall use the site internal road system.

Fence

During the implementation of the WORK, the CONSTRUCTION SITE shall be fenced and equipped with entrance gates. In a visible place, an information board with the basic information on the WORK shall be installed.

Construction site drainage

Rainwater drainage from the CONSTRUCTION SITE paved staging and parking areas and from the roofs the CONSTRUCTION SITE FACILITIES shall be provided by the CONTRACTOR by installing temporary pipes connected in advance to the plant sewerage system.

13.2 CONDITIONS FOR ENVIRONMENTAL PROTECTION DURING CONSTRUCTION, FELLING OF TREES

As a part of the CONSTRUCTION SITE preparation, the CONTRACTOR shall perform work on water stream, protection and designation of the existing utility networks and the transfer of the main delineation survey points of the WORK, including their protection and fixation in the field.

In all these activities, the CONTRACTOR shall act with maximum environmental care by choosing suitable equipment, providing a washing station for transport and export of soil from the CONSTRUCTION SITE and cleaning the roads.

The CONSTRUCTION SITE is located in an industrial area, there are no plant growths.

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13.3 IMPORTANT OVERGROUND AND UNDERGROUND UTILITIES

All the technical utility networks on the CONSTRUCTION SITE and their protection zones in the nearby surroundings are shown in Amendment D03.

13.4 CONSTRUCTION SITE ACCESS

Site security is required for 24 hours, seven days a week by a professional team. Collaboration with the PURCHASER'S security is possible.

13.5 CONTRACTOR'S WORKING HOURS

CONTRACTOR'S working hours are not limited by the PURCHASER, only the decisions of state and public authorities must be respected.

13.6 CONSTRUCTION SITE FACILITIES

The construction site facilities shall provide space for:

- Project management staff and meetings, coordination consultations, technical councils and milestone control days;
- Wardrobes and sanitary facilities for own staff and those of subcontractors;
- Parking areas for trucks and heavy machinery;
- Storage and assembly areas, warehouses and landfills in a sufficient extent;
- Gas bottle storage;
- Oil storage;
- Security and fire protection equipment.

13.7 CONTRACTOR'S ACTIVITY ON THE CONSTRUCTION SITE

The CONTRACTOR shall organize its activities in such manner that the implementation of the WORK is in accordance with the approved time schedules, in the prescribed quality, minimally disturbing the surroundings, with maximum respect for the environment and finally demonstrate the required performance parameters and perfect function in the entire WORK scope.

In view of this, the construction site facilities must be partially adjustable in order to adapt as much as possible to the needs of the construction at each construction phase.

At the expense of the CONTRACTOR, at an appropriate location, a project information board shall be installed, with dimensions of minimum 5 x 3 m, where the basic project information, responsible personnel, visualization and basic construction site facility information exchange system shall be provided.

13.8 WATER AND POWER CONNECTIONS TO CONSTRUCTION SITE FACILITIES

For the needs of construction site facilities and construction activities on site, connection points are set for:

- Power supply - connection from the existing R04KYI substation, the contractor shall set up a 3x400/230V construction site switchboard;

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- Water distribution system.

Note: At the time of possible complete shutdown of the Komořany Heating Plant, no electricity shall be available from the PURCHASER'S systems, the CONTRACTOR must obtain electricity from other source (mobile generator, etc.)

13.9 SCAFFOLDING AND AUXILIARY STRUCTURES

Scaffolding, auxiliary and load-bearing structures shall be used in many modifications many times and in a different manner in different stages of construction.

In particular the following:

- Fixed platforms;
- Sliding platforms;
- System formwork;
- Stable tubular scaffolding;
- Other auxiliary structures.

General requirements:

- ČSN EN 12 811 Temporary building structures-
- Part 1: Work scaffolding - Performance requirements and general design,
- Part 2: Material Information
- Part 3: Load tests
- ČSN 73 8101: 2005 Scaffolding. Common Provisions

Requirements for facade scaffolding:

- ČSN EN 12 810 Facade segment scaffolding-
- Part 1: Requirements for products and
- Part 2: Special design procedures

Mobile scaffolding requirements:

- ČSN EN 1004 Mobile access and working towers - Materials, dimensions, design loads, design requirements and safety
- ČSN EN 1298 Mobile access and working towers - Rules and principles for developing assembly and operating instructions

Requirements for pipes and couplings:

- ČSN EN 74 Couplings, centering pieces and bracings for working and supporting scaffolding
- Part 1: Pipe couplings - Requirements and test procedures
- Part 2: Special couplings - Requirements and test procedures
- Part 3: Flat studs and centering spindles - Requirements and test procedures
- CSN EN 39 Steel tubes for working and supporting scaffolding - Technical delivery conditions
- ČSN 73 8107 Tubular scaffolding

Requirements for temporary edge protection:

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- ČSN EN 13374 Temporary edge protection systems - Product specification, test methods
- ČSN 73 8106 Protection and catching structures

13.10 USE OF MAIN LIFTING EQUIPMENT

The lifting mechanisms shall be different at each stage of construction. They shall be used especially for vertical and horizontal load-bearing structures, steel structure assembly, roofs and stacks, especially for installation of equipment for heat management, filtration, flue gas treatment, wastewater treatment plant, WWTP, slag conveyor and slag handling. It is assumed that both stable and mobile lifting equipment shall be used.

These will be for example:

- Cargo climbing lifts;
- Stationary cranes;
- Mobile crane technology;
- Special mobile crane technology (stack, scrubber)

13.11 ENVIRONMENTAL CARE DURING CONSTRUCTION

During the construction period, the CONTRACTOR shall ensure in particular:

- Sprinkling of processes with elevated dust release, minimizing on-site storage of loose building materials and other potential dust sources;
- Continuous removal of mud and deposits on roads and paved areas;
- Cleaning of construction mechanisms before going out of the CONSTRUCTION SITE through a washing station;
- Ensuring good technical condition of the construction mechanisms, especially in view of the possible leakage of petroleum substances;
- Implementation of constant technical inspections and maintenance of construction equipment;
- The CONTRACTOR shall submit for the facility operation permit the proof of the impermeability of the newly built sumps and sewerage systems;
- The CONTRACTOR shall ensure the sampling of surface and groundwater at the CONSTRUCTION SITE, to be used for water quality checks at the time of WORK implementation and its operation, including chemical analyzes;
- In case of leakage of petroleum or other harmful substances, remove all contaminated soil immediately and deposit in a location designated for these purposes;
- The CONTRACTOR shall provide an analysis of the excavated soils and will treat this soil in accordance with the valid legislation;
- The top soil layer removed during construction work shall be used to plant the site.

13.12 WASTE MANAGEMENT

Waste arising from construction work shall be handled in accordance with Act No. 185/2001 Coll. on waste and amending certain other acts, as amended and its implementing regulations.

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The CONTRACTOR shall provide space within the construction site facilities for sorting and separate collection of individual types of waste within the plant premises in accordance with the valid legislation. The waste generated during the construction and its disposal shall be recorded as appropriate.

The CONTRACTOR shall submit for the facility operation permit the specification of the types and quantities of waste generated during the construction process and shall indicate the manner of their utilization or disposal.

Waste shall be deposited by the CONTRACTOR in large-volume containers that will be secured against unwanted tampering or waste release.

Preferably, the CONTRACTOR shall ensure the recovery of the waste prior to its disposal, the material reuse will take precedence over other waste utilization. Construction waste shall be sorted by the following items: waste earth and stones, metal, mixed building waste, wood, paper, plastic, hazardous waste.

The contractor shall hand over the waste over only to persons who are certified to accept waste under the Waste Act.

The transport equipment for waste shipment shall be closed or the loading space shall be covered in order to prevent release of the transported waste. If waste is released during transport, the waste shall be removed immediately and the place shall be cleaned.

For the facility operating permit, the CONTRACTOR shall provide evidence of how the construction waste was disposed of if recovery was not possible, and the waste records from the construction activities.

14. AMENDMENTS

14.1 AMENDMENT D01 – ZONING PERMIT DOCUMENTATION

14.2 AMENDMENT D02 – DISPERSION STUDY

14.3 AMENDMENT D03 – GENERAL LAYOUT

14.4 AMENDMENT D04 – TECHNICAL INFORMATION ON EXISTING FABRIC FILTERS

14.5 AMENDMENT D05 – ELECTRICAL PART AND CONTROL SYSTEMS

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SUPPLEMENT 2

GUARANTEED PARAMETERS

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*The following **Supplement 2 - Guaranteed Parameters** shall be completed/finalized by the contractor/participant and submitted in Volume C2 of the preliminary proposal/bid (as an annex to the WORK CONTRACT) in accordance with PURCHASER'S instructions for processing of Volume C2, contained in Part 4 of the Tender Documentation.*

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Legend:

The failure to attain the values with this colored background in a bold line box shall be a reason for not accepting the WORK and/or for withdrawing from the CONTRACT - see Section 42.2.19 of the CONTRACT

The failure to achieve the values with this colored background shall result in a contractual penalty - see Section 42.2 of the CONTRACT.

For values without colored background, the guaranteed values are not under penalty.

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1 BASELINE CONDITIONS

During verification of the guaranteed parameters, it is not allowed to change the adjustment of the process technology; the equipment shall be operated under stable automatic operation, without manual intervention.

Data on input parameters (flue gas, limestone, lime, water, ash) are provided in Supplement 1 to the CONTRACT and are divided into guaranteed parameters (i.e. those parameters guaranteed by the PURCHASER) and indicative parameters.

1.1 ENVIRONMENT REFERENCE VALUES

Ambient temperature	°C	20
Elevation above sea level	m a.s.l.	260
Humidity	%	60

1.2 INPUT FLUE GAS PARAMETERS

The guaranteed values shall be demonstrated in guaranteed parameter tests, where relevant, for the following operating states:

Operating state:	Abbreviation	Flue gas quantity
– Maximum operating state	PS Max	Q wet flue gas 800,000 Nm ³ /h
– Operating state of boiler room 1	PS 1	Q wet flue gas 593,416 Nm ³ /h
– Operating state of boiler room 2	PS 2	Q wet flue gas 421,550 Nm ³ /h
– Operating state of boiler room 3	PS 3	Q wet flue gas 203,916 Nm ³ /h
– Operating state of boiler room 4	PS 4	Q wet flue gas 600,000 Nm ³ /h

The reference parameters of entering flue gas (i.e. at boiler room output) for the above mentioned operating states are provided in Chapter 1.5.1, Supplement 1 to the CONTRACT and are related to normative parameters (i.e. 101,325 Pa and temperature 0 °C).

The specific operating state at which the individual guaranteed values shall be proven is provided in Chapter 2 for the individual guaranteed parameters by the abbreviation of the respective operating state.

1.3 MATERIALS, MEDIA AND ENERGIES

The guaranteed values shall be demonstrated in the GUARANTEED PARAMETER TESTS using the following materials, media and energies available to the PURCHASER. Regarding compressed air, the CONTRACTOR has the option of using air from the PURCHASER'S source or from a new source constructed within the WORK scope.

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1.3.1 LIMESTONE

For the operation of the WORK, the following four types of limestones are assumed, from different sources:

Type:	Abbreviation	Source
– Type 1	V1	Lime kiln Čertovy schody
– Type 2	V2	Lafarge Cement
– Type 3	V3	Kotouč Štramberk
– Type 4	V4	Lime kiln Vitošov

Detailed specification of the individual limestone types, including the measured and limit values of the individual constituents/indicators for each of them are provided in Chapter 1.8.1, Supplement 1 to the CONTRACT.

The specific type of limestone used in proving the individual guaranteed values is provided in Chapter 2 for the individual guaranteed parameters and is designated by an abbreviation of the type together with information if the measured values (abbreviated as "zm") or the limit value (abbreviated as "lim") of the constituents/indicators are consideration for the given type.

1.3.2 LIME (hydrated LIME)

For parameters see Chapter 1.8.2, Supplement 1 to the CONTRACT.

1.3.3 RAW WATER

For parameters see Chapter 1.8.4.1, Supplement 1 to the CONTRACT.

1.3.4 SALINE WATER

For parameters see Chapter 1.8.4.2, Supplement 1 to the CONTRACT.

1.3.5 ASH

This is a dry mixture of ash LM and LF (LM – bedding material and LF – fiber filter ash) for the production of the stabilizate. For parameters see Chapter 1.8.5, Supplement 1 to the CONTRACT.

The following hourly production of ash from combustion is assumed for the individual operating states:

Operating state	Unit	Value
PS Max	t/h	52.01
PS 1	t/h	30.73
PS 2	t/h	21.25
PS 3	t/h	9.71
PS 4	t/h	35.57

1.3.6 PNEUMATIC TRANSPORT AND INSTRUMENT AIR

For parameters see Chapter 1.8.6.1, Supplement 1 to the CONTRACT.

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1.3.7 PNEUMATIC TRANSPORT AIR

For parameters see Chapter 1.8.6.2, Supplement 1 to the CONTRACT.

2 GUARANTEED PARAMETERS

The CONTRACTOR guarantees to the CLIENT that the supplied WORK shall comply with the following parameters and functions:

2.1 EMITTED FLUE GAS PARAMETERS

Conditions of proofing (tests):

- The following guaranteed values of the emitted flue gas must be fulfilled in all operating states of the WORK, from minimum to maximum of flue gas flow rate entering the desulphurization and in full extent of their parameters according to Chapter 1.5.1, Supplement 1 to the CONTRACT
- the guaranteed values of outgoing flue gas must be met in all operating states with dynamic changes in boiler output
- The following guaranteed values of emitted flue gases must be fulfilled concurrently when using all types of limestone and other raw materials provided in Chapter 1.8., Supplement 1 to the CONTRACT, when combined (for limestone).
- Preferably, saline water must always be used.
- Concurrently, the operation of boilers must not be adversely affected, i.e. e.g. by flue gas pressure increase or decrease above the current value at the supply boundary, deterioration of the boiler dynamics controllability, increase of own boiler consumption, etc.

Parameter		Operating state	Limestone	Unit	Relation-ship	Guaranteed value	Note
2.1.1	SO ₂	all states	all types	mg/Nm ³ R	less than or equal	100	Note (5)
2.1.2	TZL after absorber	all states	all types	mg/Nm ³ R	less than or equal	7	Note (1) Note (5)
2.1.3	TZL after LF when operating to dry stack (after each boiler)	all states	all types	mg/Nm ³ R	less than or equal	7	Note (5)
2.1.4	TZL separation efficiency in ABS	all states	all types	%	greater than or equal	73.1	Note (4) a Note (12)
2.1.5	HCl	all states	all types	mg/Nm ³ R	less than or equal	5	
2.1.6	HF	all states	all types	mg/Nm ³ R	less than or equal	3	

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2.1.7	Emission (concentration) of droplets	all states	all types	mg/Nm ³ R	less than or equal	50	
2.1.8	Condition of minimum temperature at stack (outlet)	all states	all types	°C	greater than or equal	54	Note (3)
2.1.9	Hg	all states	all types	mg/Nm ³ R	less than or equal	value at input	
2.1.10	NO _x	all states	all types	mg/Nm ³ R	less than or equal	value at input	
2.1.11	CO	all states	all types	mg/Nm ³ R	less than or equal	value at input	

R... Reference O₂ concentration 6% at Standard (N) state parameters i.e. 101,325 Pa and 0 °C

N... Standard state parameters 101,325 Pa and 0 °C

Notes:

Note: (1) Required output TZL value must be provided (guaranteed) for the maximum input of 250 g/Nm³ R i.e. the original LF design value.

Note: (3) Emitted flue gas temperature must not adversely affect the dispersion parameters according to the dispersion study (i.e. in particular temperature below the temperature considered in RS)

Note: (4) Guaranteed TZL values after the absorber must be guaranteed at TZL after LF = 26 mg/Nm³ R.

Note: (5) Proof every half hour for the duration of the GUARANTEED PARAMETER MEASUREMENT and subsequently to be carried out in compliance with the applicable legislation.

Note: (12) This guaranteed parameter shall be demonstrated in one operating state as defined by the PURCHASER.

2.2 LIMESTONE CONSUMPTION

Parameter		Operating state	Limestone	Unit	Guaranteed value is less or equal to	Note
2.2.1	Limestone consumption	PS Max	V1 lim ¹	kg/h	... To be inserted by participant	
2.2.2	Same as above	PS 1	V1 zm ²	kg/h	... To be inserted by participant	
2.2.3	Same as above	PS 2	V1 zm	kg/h	... To be inserted by participant	

¹ Limit value according to Supplement 1 to the Contract, Chapter 1.8.1 (applies to all tables in Chapters 2.3 – 2.7)

² Measured value according to Supplement 1 to the Contract, Chapter 1.8.1 (applies to all tables in Chapters 2.3 – 2.7)

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2.2.4	Same as above	PS 3	V1 zm	kg/h	... To be inserted by participant	
2.2.5	Same as above	PS 4	V1 zm	kg/h	... To be inserted by participant	
2.2.6	Same as above	PS Max	V2 zm	kg/h	... To be inserted by participant	

2.3 DRY HYDRATE ROUTE

a) Maximum capacity of the dry hydrate transportation route

Parameter		Operating state	Dry hydrate	Unit	Guaranteed value is greater or equal to	Note
2.3.1	Capacity of dry hydrate transportation route	All	according to Chapter 1.3.2	kg/h	13,000	

b) Electric energy consumption of dry hydrate transportation route at transportation capacity of 13,000 kg/h

Parameter		Operating state	Dry hydrate	Unit	Guaranteed value is less or equal to	Note
2.3.2	Electric energy consumption of dry hydrate transportation route	13,000 kg/h	according to Chapter 1.3.2	kWh/h	... To be inserted by participant	

If air from a TKY source is used, it is necessary to state so in the table in chap. 2.5 (2.5.13 or 2.5.14).

2.4 ELECTRICAL ENERGY CONSUMPTION (POWER REQUIREMENT)

The electrical power consumption of the WORK shall be measured during the operation of the WORK as the sum of the measured power values of all electrical appliances within the WORK (including the booster fan and electrical energy for the material transport to the mixer input and the energy for the production of compressed air, if the compressed air is produced by the equipment supplied within the WORK scope). The power consumption will be calculated from the electricity consumption of the relevant appliances for a defined time (to be determined in the GUARANTEED MEASUREMENT plan).

It does not include power consumption for aeration of existing silos, tanker unloading and regeneration of silo dust abatement equipment, and does not include the electricity consumption for the production of compressed air, if the compressed air is taken from PURCHASER'S sources and does not include electricity consumption for the transport of dry hydrate if produced from a source supplied within the WORK.

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a) Electrical energy consumption (input) at production of 0 % energo gypsum:

Parameter		Operating state	Limestone	Unit	Guaranteed value is less or equal to	Note
2.4.1	Electrical energy consumption	PS Max	V1 lim	kW (kWh/h)	... To be inserted by participant	
2.4.2	Same as above	PS 1	V1 zm	kW (kWh/h)	... To be inserted by participant	
2.4.3	Same as above	PS 2	V1 zm	kW (kWh/h)	... To be inserted by participant	
2.4.4	Same as above	PS 3	V1 zm	kW (kWh/h)	... To be inserted by participant	
2.4.5	Same as above	PS 4	V1 zm	kW (kWh/h)	... To be inserted by participant	
2.4.6	Same as above	PS Max	V2 zm	kW (kWh/h)	... To be inserted by participant	

2.5 COMPRESSED AIR CONSUMPTION SOURCED FROM PURCHASER

If the compressed air required to operate the WORK shall be taken from the PURCHASER'S existing sources, the compressed air consumption shall be guaranteed, and its verification for the calculation of the power consumption shall be part of the guaranteed parameter measurement.

The compressed air consumption does not include consumption for aeration of existing silos and tanker unloading. Also, parameters 2.5.1 to 2.5.12 do not include the consumption for fly ash transport from the intermediate silo into the LF silos.

The consumption in parameters 2.5.13 respectively 2.5.14 represents air consumption from the PURCHASER's source is at the capacity of the dry hydrate route of 13,000 kg/h. Consumption in parameters 2.5.13 respectively 2.5.14 is no longer duplicated in consumption in parameters 2.5.1 to 2.5.12.

Compressed air consumption at production of 0 % energo gypsum:

Parameter		Operating state	Limestone /Dry hydrate	Unit	Guaranteed value is less or equal to	Note
2.5.1	Compressed air consumption at 6 bar	PS Max	V1 lim	Nm ³ /h	... To be inserted by participant	
2.5.2	Compressed air consumption at 3.5 bar	PS Max	V1 lim	Nm ³ /h	... To be inserted by participant	

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Parameter		Operating state	Limestone /Dry hydrate	Unit	Guaranteed value is less or equal to	Note
2.5.3	Compressed air consumption at 6 bar	PS 1	V1 zm	Nm ³ /h	... To be inserted by participant	
2.5.4	Compressed air consumption at 3.5 bar	PS 1	V1 zm	Nm ³ /h	... To be inserted by participant	
2.5.5	Compressed air consumption at 6 bar	PS 2	V1 zm	Nm ³ /h	... To be inserted by participant	
2.5.6	Compressed air consumption at 3.5 bar	PS 2	V1 zm	Nm ³ /h	... To be inserted by participant	
2.5.7	Compressed air consumption at 6 bar	PS 2	V1 zm	Nm ³ /h	... To be inserted by participant	
2.5.8	Compressed air consumption at 3.5 bar	PS 3	V1 zm	Nm ³ /h	... To be inserted by participant	
2.5.9	Compressed air consumption at 6 bar	PS 4	V1 zm	Nm ³ /h	... To be inserted by participant	
2.5.10	Compressed air consumption at 3.5 bar	PS 4	V1 zm	Nm ³ /h	... To be inserted by participant	
2.5.11	Compressed air consumption at 6 bar	PS Max	V2 zm	Nm ³ /h	... To be inserted by participant	
2.5.12	Compressed air consumption at 3.5 bar	PS Max	V2 zm	Nm ³ /h	... To be inserted by participant	
2.5.13	Average hourly compressed air consumption at 6 bar for dry hydrate transport route at 13,000 kg/h	13,000 kg/h	Dry hydrate	Nm ³ /h	... To be inserted by participant	

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Parameter		Operating state	Limestone /Dry hydrate	Unit	Guaranteed value is less or equal to	Note
2.5.14	Average hourly compressed air consumption at 3.5 bar for dry hydrate transport route at 13,000 kg/h	13,000 kg/h	Dry hydrate	Nm ³ /h	... To be inserted by participant	

2.6 ENERGO GYPSUM PRODUCTION

- Water in gypsum suspension 50% by weight in raw state
- In the event of the production of the dewatered energo gypsum, the simultaneous shipment of stabilizate shall be ensured in a daily cycle.

a) Water in energo gypsum suspension

Parameter		Operating state	Limestone	Unit	Guaranteed value is less or equal to	Note
2.6.1	Water in energo gypsum suspension	PS 1	V1 zm	%	50	
2.6.2	Water in energo gypsum suspension	PS 2	V1 zm	%	50	
2.6.3	Water in energo gypsum suspension	PS 3	V1 zm	%	50	
2.6.4	Water in energo gypsum suspension	PS 4	V1 zm	%	50	

2.7 TOTAL WATER CONSUMPTION

Total water consumption shall be determined for operation when considering all mass included in the stabilizate (i.e. 0% energo gypsum production). The guaranteed value of "Total water consumption" shall be reported (corrected, adjusted) for extra water consumed in addition in the stabilizate according to the assumed formula, see Supplement 1 to the CONTRACT, Chapter 5.3.1, formula A).

Note: Consumption shall include water leaving with the energo gypsum to the stabilizate in the gypsum suspension.

Parameter		Operating state	Limestone	Unit	Guaranteed value is less or equal to	Note
2.7.1	Total water consumption	PS Max	V1 lim ¹	t/h	... To be inserted by participant	
2.7.2	Total water consumption	PS 2	V1 zm ²	t/h	... To be inserted by participant	

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Parameter	Operating state	Limestone	Unit	Guaranteed value is less or equal to	Note
2.7.3	Total water consumption	PS Max	V2 zm	t/h	... To be inserted by participant

2.8 WORK AVAILABILITY

WORK availability means the time during which the WORK can operate during the evaluated period in all operating states listed in Chapter 1.5.1, Annexes 1 to the CONTRACT and using all the limestone types listed in Chapter 1.8.1, Supplement 1 to the CONTRACT.

WORK availability per year is equal to the total time over the evaluated period of one year when the WORK is either in operation or is ready for immediate start-up [h].

Proofing conditions (tests):

- The availability shall be evaluated by the PURCHASER with the CONTRACTOR'S participation based on the facility's operational records for each year of operation within the WARRANTY PERIOD, starting from the DAY OF PRELIMINARY ACCEPTANCE OF THE WORK.
- The availability does not include time from the moment the plant is shut down (switching the flue gas to the dry stack) due to a failure or accident of the plant until the device is started (introducing the flue gas into the absorber) or the time when the plant is unable to meet the guaranteed parameters.
- Availability includes time for start-up from downtime and downtime caused:
 - by external influences or by force majeure,
 - by improper handling (non-compliance with operating instructions),
 - by equipment failure not part of WORK scope,
 - by PURCHASER'S decision or other reasons on its part.

For the 3rd year of operation, availability includes also time for start-ups from downtime and downtime due to failure of components without extended warranty.

Guaranteed values:

Parameter	Unit	Limit value equal to	Guaranteed value is greater or equal to
2.8.1	WORK availability in 1st year of operation	h	8,136
2.8.2	WORK availability in 2 nd and 3 rd year of operation	h	8,256

Guaranteed value of availability must not be met at the expense of increased maintenance requirements

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2.9 NOISE EMISSIONS

The noise emission levels shall not exceed the maximum health limits stipulated in particular by the Act No. 258/2000 Coll. on public health protection, as amended, and Government Decree No. 272/2011 Coll. on health protection from adverse effects of noise and vibrations, as amended.

The exceedance of noise limits may be a reason for not accepting the WORK and/or withdrawing from the CONTRACT - see Section 44.2.12 of the CONTRACT

Limits for noise from stationary sources during operation - protected outdoor area of buildings:

day LAeq, 8h = 50 dB (A) (for the loudest 8 hours)

night LAeq, 1h = 40 dB (A) (for the loudest 1 hour)

These noise levels shall be verified at the points set by the government permitting authorities.

Indoor environment:

Indoor spaces without permanent operation	maximum 85 dB (A), 1 m from the device
Internal roads	maximum 75 dB (A)
Control room	maximum 50 dB (A)
Offices, laboratories	maximum 60 dB (A)

3 GUARANTEE CORRECTION CURVES

To be inserted by the participant, in the minimum scope as follows:

Effectiveness of desulphurization: Dependence of output SO₂ concentration on input SO₂ concentration in flue gas at the maximum flue gas flow rate and operation of all circulation pumps and operation without one circulation pump, in flue gas temperature range 130 - 180 °C.

Effectiveness of desulphurization: Dependence of output SO₂ concentration on input SO₂ concentration in flue gas, in the range 120,000 – 800,000 Nm³/h (wet) at SO₂ input concentration range of 3,206 mg/Nm³ (dry, (R)) – 6,801 mg/Nm³ (dry, (R)). An extremity curve for input concentration of 10,300 mg/Nm³ (dry, (R)) shall be created, and for all cases the extreme state of SO₂ input at 3,610 kg/h shall be indicated. The number of pumps shall be provided according to the design.

Consumption of sorbent: Dependence of consumption of sorbent V1 lim and V1 zm at different concentrations of SO₂ in untreated (no desulfurization) flue gas (in the range from 3,206 mg/Nm³ (dry, (R)) – 6,801 mg/Nm³ (dry, (R)) for output SO₂ concentration = 100 mg/Nm³ (dry, (R)), depending on flue gas flow rate between 120,000 and 800,000 Nm³/h (wet).

Electric power consumption: Dependence of power consumption (kWh/h) on flue gas flow rate in the range from 120,000 to 800,000 Nm³/h (wet) and temperature range 130 -180 °C. The curves shall be for SO₂ input concentration range from 3,206 mg/Nm³ (dry, (R)) to 6,801 mg/Nm³ (dry, (R)).

Electric power consumption: Electric power consumption curve (kWh/h) at input concentration of SO₂ = 3,206 mg/ Nm³ (dry, (R)) always at the maximum flue gas flow rate, depending on the input temperature range 130 - 180 °C.

Electric power consumption: Electric power consumption curve (kWh/h) at input concentration of SO₂ = 4,291 mg/Nm³ (dry, (R)) always at the maximum flue gas flow rate, depending on the input temperature range 130 - 180 °C.

Water consumption: Dependence of water consumption on flue gas flow rate in the range from 120,000 to 800,000 Nm³/h and flue gas temperature in the range of 130 - 180 °C. Measurement step 5 °C.

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Quality of dewatered energo gypsum: Dependence of gypsum quality on flue gas flow rate from 120,000 – 800,000 Nm³/h and input SO₂ concentration 3,206 mg/Nm³ (dry, (R)) – 6,801 mg/Nm³. Dependence of energo gypsum purity on limestone purity and limit limestone purity to attain the required quality of energo gypsum shall be determined. Maximum and minimum production of energo gypsum shall be indicated.

4 CONDITIONS FOR GUARANTEE MEASUREMENTS

The conditions for guaranteed parameter measurements shall be elaborated in detail by the CONTRACTOR in the Guaranteed parameter measurement plan, see Chapter 2.8, Supplement 3 to the Contract.

5 TERMS OF GUARANTEED PARAMETER VERIFICATION AND SANCTIONS FOR NONCOMPLIANCE

Item.	Guaranteed parameter	To be verified in Guaranteed Parameter Measurements performed in		Parameter noncompliance results in:	
		TEST „A“	TEST „B“	Contractual penalty ^{A)}	Non-acceptance of WORK /withdrawal from CONTRACT
2.1.	Emitted flue gas parameters	X	X	X	X
2.2	Limestone consumption	X	X	X	
2.3	Dry hydrate route				
2.3a	Maximum capacity of dry hydrate transport route	X	X	X	
2.3b	Electric power consumption of dry hydrate route at maximum transport capacity of 13,000 kg/h	X	X	X	
2.4	Electrical energy consumption	X	X	X	
2.5	Compressed air consumption	X	X	X	
2.6	Energo gypsum production				
2.6.a	– Water in energo gypsum suspension	X ^{B)}			
2.7	Total water consumption	X	X	X	
2.8	WORK availability	X ^{C)}		X	
2.9	Noise emissions	X	X		X

Explanatory notes:

GUARANTEE MEASUREMENTS under TEST "A" shall be performed within the COMPLEX TEST.

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GUARANTEE MEASUREMENTS under TEST "B" shall be made within the twenty-four (24) month WARRANTY PERIOD (at the end of the WARRANTY PERIOD), at a time set by the PURCHASER.

- A) The penalty sanctions for non-compliance with guaranteed parameters are set out in the CONTRACT.
- B) Water in the energo gypsum suspension is not part of the guaranteed parameter measurements, to be demonstrated by the CONTRACTOR during the COMPLEX TESTING for the preliminary acceptance certificate.
- C) WORK availability shall be evaluated by the PURCHASER with CONTRACTOR'S participation based on WORK operational records for the 1st to 3rd year of operation after the PRELIMINARY ACCEPTANCE OF THE WORK.

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SUPPLEMENT 3

DOCUMENTATION

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*Tender participants need to provide the following **Supplement 3 – Documentation** as part of Volume C3 of their Draft Offer / Offer (being a supplement to the CONTRACT FOR WORK) in compliance with the contracting authority's instructions for the contents of Volume C3 contained in Section 4 of the Procurement Documents.*

Supplement 3 is a listing of the PURCHASER's requirements on the scope and format, labeling, PURCHASER approval, and other execution and handling issues related to the documentation prepared by the CONTRACTOR in relation to the WORK.

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1. PURPOSE OF CONTRACT DOCUMENTATION

The CONTRACTOR will need to provide, as part of the CONTRACT, timely documentation in a scope, quantity, and quality sufficient to:

- Obtain all approvals, consents, and statements from public authorities that current Czech legislation requires for the execution and subsequent operation of the WORK
- Assess the overall project for the WORK, its timeline and deadlines, and its compliance with CONTRACT requirements and the results and feedback from the legislative approval process
- Coordinate the WORK with other activities that may be ongoing at the SITE
- Ensure the quality of the WORK
- Execute the WORK, including assembly and commissioning
- Allow the GUARANTEE MEASUREMENT to be performed
- Properly train the PURCHASER's personnel
- Operate, maintain, and repair the WORK
- Document the final state of the completed WORK

Throughout the execution of the WORK, the CONTRACTOR shall maintain a database (listing) of the provided documentation. The will be kept in digital form as specified in Section 3 below and will contain, at minimum, the following:

- Document / drawing number
- Document / drawing name
- Publication date and number of last valid version
- Document / drawing status vis-à-vis the approvals process
- Approval date (for approved documents)
- Document author
- Document type (DOCUMENTATION FOR EXECUTION OF THE PROJECT, Quality Documentation, SITE FACILITIES Documentation, etc.)

The Contractor shall provide the PURCHASER with the current version of the electronic database every time any documentation is provided (including partial documentation and revisions).

2. CONTRACT DOCUMENTATION

As part of the CONTRACT, the CONTRACTOR will need to provide, at minimum, the following documentation:

- Administration Rules
- Documentation Plan (PLTD)
- Quality Documentation
- DOCUMENTATION FOR EXECUTION OF THE PROJECT (the DESIGN)
- Documentation for work-in-progress change requests
- Technical documentation
- COMMISSIONING Plan
- GUARANTEE MEASUREMENT Plan
- Operations Rules
- Maintenance Rules

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- Documentation required for official approval of completed WORK and authorization of trial operation
- Documentation for PURCHASER personnel training
- Documentation of actual execution of the WORK

The requirements on document form and format listed below should always be upheld. Note that this document only discusses in detail those document types that are not specified elsewhere in the CONTRACT (e.g. timetables).

All CONTRACTOR-provided documentation needs to maintain clarity and legibility and meet the requirements of applicable standards and engineering best practice.

2.1 ADMINISTRATION RULES

The document of Administration Rules define the binding rules for communication between the CONTRACTOR and the PURCHASER and for the handling of WORK-related documents.

The Administration Rules define procedures for document exchange between the CONTRACTOR and the PURCHASER and for the publication, distribution, revisions, and archiving of such documents.

The Administration Rules also specify the standards of electronic communication between the CONTRACTOR's and the PURCHASER's representatives.

The Administration Rules are to contain, at minimum:

1. Initial provisions
2. Purpose and scope of application
3. Definitions and abbreviations
4. Identification of documentation input and output points (both at the CONTRACTOR and at the PURCHASER)
5. Guidelines for communication and correspondence, assignment of responsibilities
6. Requirements on headers for physical and electronic correspondence
7. Addresses, identification, assigned representatives, and contact information of the PURCHASER, CONTRACTOR, Construction Manager (TDI), Authorized Representatives, Notified Representatives, Occupational Health and Safety (OHS) Coordinator, independent GUARANTEE MEASUREMENT provider, and PURCHASER's Consultants
8. WORK public relations
9. Final provisions

Supplements and annexes, e.g.:

- CONTRACTOR's organizational chart (with names) for WORK project
- PURCHASER's organizational chart (with names) for WORK project
- others

2.2 DOCUMENTATION PLAN (PLTD)

The Documentation Plan is a document defining the manner and procedures through which the CONTRACTOR creates WORK-related documentation, the documentation approval process, and expected deadlines for the various documents.

The PLTD shall contain, at minimum:

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1) Formal documentation rules, such as:

- Software used
- Unified labeling system for printed documents
- File name conventions for electronic documents
- SUBCONTRACTOR documentation labeling rules
- Templates for drawing stamps
- Templates for document cover and body pages
- Templates for letters, protocols, forms, transcripts, reports, change sheets
- Documentation distribution and archiving management guidelines, incl. version marking
- Version history management

2) List of documentation created by CONTRACTOR as specified in Sections 2.3 through 2.16 below, list to adequately specify, at minimum:

- Document general contents and structure
- Author (CONTRACTOR vs. SUBCONTRACTOR)
- Database structure (for database documents / lists)

3) Documentation approval and handover timeline, being a basis for the CONTRACTOR's provision of documents to the PURCHASER for approval, timeline to include, at minimum:

- Expected CONTRACTOR-PURCHASER consultation days
- Planned deadlines for receipt of PURCHASER's comments and approvals
- Any other information that may be required to manage and coordinate the CONTRACTOR's documentation process, e.g. inputs required from SUBCONTRACTORS and SUBCONTRACTOR deadlines

Time data is to be based on the current version of the project timeline and execution plan.

The current, updated version of the documentation exchange and approvals program is a required input to Progress Meetings held pursuant to Section 20 of the CONTRACT.

2.3 QUALITY DOCUMENTATION

Quality documentation shall include:

- QUALITY PLAN
- Inspection and Testing Plan
- Test programs
- Inspections and Tests Book

2.3.1 QUALITY PLAN

The CONTRACTOR must develop the QUALITY PLAN for the WORK in compliance with the Czech Standard ISO 10005 standard.

The QUALITY PLAN will cover the entire scope of the WORK and contain quality management procedures for all WORK-related activities.

The QUALITY PLAN will provide a full list of activities affecting the quality of the WORK.

The Plan will further define the rights and responsibilities of quality management staff. The Plan will need to demonstrate that the requirements specified in the CONTRACT are being managed and planned for and that compliance is being monitored. The Plan shall further define the

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standards applied, technical requirements and standards applicable to inspections, quality documentation types, and assigned staff and attendance at inspections.

The QUALITY PLAN shall list in an orderly fashion how these activities are being managed throughout the various execution phases; i.e., during:

- Design work (structural design)
- Purchasing and negotiations for materials and subcontracting
- Production
- Construction and assembly
- COMMISSIONING
- TRIAL OPERATION

2.3.2 INSPECTION AND TEST PLAN

The CONTRACTOR shall prepare an Inspection and Test Plan (ITP), this to contain all tests and inspections performed by the CONTRACTOR and its SUBCONTRACTORS. The scope of inspections and testing is defined in Section 12 of Supplement 1 to the CONTRACT (PURCHASER's Technical Requirements for the WORK) for all phases of WORK preparation and execution; the purpose of inspections and testing is to demonstrate the WORK's compliance with the PURCHASER's requirements.

The ITP shall include, but is not to be limited to:

- Acceptance inspections and testing of materials and subcontracted mass-produced equipment
- Production inspections and testing of custom equipment
- Factory Acceptance Tests (FAT) of finished products
- Inspections and testing of structural modules
- Pre-installation acceptance inspections and testing of devices
- Individual testing (IT) upon MECHANICAL COMPLETION
- Inspections and testing during COMMISSIONING, including:
 - Preparation for COMPLEX TESTS
 - COMPLEX TESTS, including TEST "A"
 - PERFORMANCE TEST
- TEST "B"

Inspection and Testing Plans are to be prepared for individual SO / IO / PS and ordered chronologically; they shall contain, at minimum:

- Test or inspection name
- System being tested or inspected
- Test or inspection type (from among the types listed above)
- Clear technical specification of the test or inspection
- Testing / inspection methods and applicable legislation (the Test / Inspection Procedure), including evaluation criteria. Test and inspection for which a program has been prepared pursuant to Section 2.3.3 below, a detailed listing of criteria can be deferred to a later point in the program.
- Manner in which results of test and/or inspections and evaluation are recorded

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- Space for Witness and Hold Points of the PURCHASER's acceptance inspection made by the PURCHASER / assigned third party's acceptance inspection

Whenever the CONTRACTOR is required to invite the PURCHASER's representatives to participate in a test or inspection, this should always be indicated at the respective test or inspection.

2.3.3 TEST PROGRAM

Test programs will be prepared only for:

- FAT inspections and testing
- COMMISSIONING inspections and testing
- TEST "B" inspections and testing (performed by PURCHASER or assigned third party)

Test Programs need to contain, at minimum:

- Purpose of the test
- Values to be demonstrated, parameters to be achieved
- Description of test preparation and procedure, including a timetable
- List of equipment, systems, and subsystems tested or inspected
- Readiness requirements for functionally-related devices
- Personnel requirements (incl. PURCHASER's representatives where required)
- Line diagram representing the various tasks
- List of documents and standards applicable to the test / inspection
- Measurement and evaluation methods
- Success criteria
- List of all devices used in inspection / testing, incl. calibration protocols
- Draft milestone protocols for progress evaluation (if used)
- Draft final protocol

The scope, execution, and quality of testing and inspection work needs to meet, at minimum, requirements of the CONTRACT and applicable standards.

Note: FAT Testing and Inspection Programs should only contain the relevant portions of the above data (i.e., omit interrelated devices and PURCHASER personnel).

2.3.4 INSPECTIONS AND TESTS BOOK

The Book of Inspections and Tests is a comprehensive set of documentation (protocols) of test, inspection, and acceptance test results for all activities listed in the ITP; the Book shall further include copies of calibration protocols for testing devices.

Inspections and testing documentation will be maintained separately for construction, machinery, electrical systems, and control systems; all documentation will be updated as the WORK progresses.

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2.4 DOCUMENTATION FOR EXECUTION OF THE PROJECT (DESIGN), INCL. SITE FACILITIES DESIGN

The DOCUMENTATION FOR EXECUTION OF THE PROJECT (hereinafter also called DESIGN) is the documentation so defined in the Act no. 183/2006 – the Construction Act and in Supplement 13 to the Decree no. 499/2006 on Construction Documentation.

The DESIGN includes all project documentation required for the construction permitting process, and must incorporate all conditions and requirements imposed on construction by the Czech Building Control Officer (or any other relevant public authorities and authorized stakeholders) as these are listed in the Construction Permit. (Note: Project documentation required for the construction permitting process will be prepared by a third-party contractor of the PURCHASER and provided to the CONTRACTOR, as soon as an official approval (Construction Permit) is received .)

The DESIGN must include all information and documentation required for the WORK, including detailed technical design, process considerations, and interactions with any existing or under-construction PURCHASER equipment.

In order to facilitate the WORK and improve documentation standards and coordination, the DESIGN shall further include a separate file, titled Comprehensive DESIGN of the WORK, containing design details relevant for each involved professional specialization; we note this file prevails over and above the requirements of the Decree 499/2006.

Principal sources for the DESIGN include:

- The CONTRACT, including all Supplements thereto
- The project documentation that is part of the Construction Permit, including the evaluation, comments, and requirements of involved official parties
- Current standards in KKS equipment marking
- Changes requested by the PURCHASER during DESIGN work

The DESIGN is to be a comprehensive, unified whole prepared by the CONTRACTOR, and will need to consistently include data and documentation relating to any SUBCONTRACTORS.

2.4.1 PURCHASER'S SPECIFIC REQUIREMENTS ON THE DOCUMENTATION FOR EXECUTION OF THE PROJECT

2.4.1.1 COMPREHENSIVE DESIGN OF THE WORK

The Comprehensive DESIGN of the WORK is additional documentation that will need to include technical reports, drawings, calculations, and lists documenting the design of the WORK as a whole across all professional specializations, including any and all relationships among different SO, IO, and PS, as well as all other documents and databases required to coordinate the WORK as a whole – be they internal (among the WORK's individual SO, IO, and PS) or external (between the WORK and any related structured or devices).

The Comprehensive DESIGN thus principally summarizes the WORK's design across all professional specializations, the technologies used, how the WORK breaks down into the various IO, SO, and PS, etc., including:

- Overall design and layout of the WORK
- Design of internal and external information systems and proposed markings, advertising, etc.
- Technical design of the WORK as a whole, incl. all related calculations, technical and financial performance projections, coordinated master lists, etc.
- Overall design of the WORK's control system, regardless of whether or not a control system element is part of a technical PS. This includes an overall configuration schematic,

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communication technologies used, design of electrical system connections, interface and control design, control room design and control element ergonomics, coordinated lists of measurements and signals, etc.

- Overall design of the WORK's electrical systems, regardless of whether or not an electrical element is part of a technical PS.

2.4.1.2 SOURCES FOR OHS PLAN

The CONTRACTOR shall prepare a draft Occupational Health and Safety Plan for work at the SITE in accordance with the requirements of the Act No. 309/2006 – the Occupational Health and Safety Act (OHSa) and of Czech Government Order no. 591/2006 on Minimum OHS Requirements at Construction SITES.

The OHS plan for the SITE will need to detail the measures and standards applied to ensure adequate OHS protection and accident prevention during the WORK.

The Plan will take into account the specific conditions at the SITE and the specific technological processes and work activities that the CONTRACTOR will employ to realize the WORK, and will complement in particular the Construction Organization Rules document.

The OHS Plan will include the CONTRACTOR's obligation to inform the PURCHASER whenever procedures and materials are used that present an increased risk to the PURCHASER's assets and / or to the life and limb of any and all natural persons that may be affected by such, considering the physical, chemical, and / or bio-active effects of these procedures and / or materials.

The CONTRACTOR shall provide the PURCHASER with information on the physical, chemical, and / or bio-active effects of procedures and materials used to an extent reflecting the scientific and technological state of the art as of the time the procedure or material is used, including a listing of any preventive measures taken or available to protect the life and limb of individuals present at and around the SITE.

If chemicals are used that possess at least one of the "dangerous properties" defined in the Act No. 356/2003 – the Chemicals Act, as amended, the CONTRACTOR shall be required, before commencing work, to present to the PURCHASER's representatives (or the appointed OHS Coordinator) a Czech-language Material Safety Data Sheet (MSDS) for any such chemicals.

2.4.1.3 SITE FACILITIES DESIGN

The SITE FACILITIES DESIGN document needs to include the design specification of:

- Delivery unloading points
- Pre-assembly and assembly areas and related machinery
- Power sources and distribution on the SITE
- Warehouses and storage areas
- Restrooms and other personnel areas
- Assembly machinery, incl. manner of installation
- Connection points to existing systems
- Lighting
- Fences, walls, etc., and security

A graphical plan of SITE FACILITIES will also need to be provided.

The plan should be executed in 1:500 scale and contain, at minimum:

- Location and elevation of all existing underground utility networks and other concealed systems

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- Perimeter line of the completed WORK and temporary perimeter line of the SITE (if outside permanent perimeter)
- Location and elevation of proposed construction, including connections to PURCHASER's existing systems, as well as proposed relocations of above- or underground utility networks, if any
- Areas available for storage dumps and temporary SITE Facility structures
- Personnel and vehicle entry points of main and secondary SITE
- Location of water and energy connections supplying the SITE, incl. connection points; sewage connection points for SITE FACILITIES; water drainage design, telephone connections

2.4.1.4 UPDATES TO CONSTRUCTION MANAGEMENT RULES (ZOV/CM)

The PURCHASER shall update the Construction Management Rules (ZOV/CM) based on the CM version prepared for the construction permitting process; updates need to reflect the Timetable and Execution Plan for the WORK and take into account the specific conditions at the SITE, and the design and construction process proposed for the WORK.

The updates need to address the basic issues in SITE FACILITIES construction; the construction process; impact of construction on ongoing operations, the general area, and the environment; public health and safety; internal and external construction-related transportation; temporary use of land; and other elements that may impact the execution of the WORK.

2.4.1.5 DOCUMENTATION OF FUNCTIONAL SYSTEMS AND SUBSYSTEMS

Documentation of Functional Systems and Functional Subsystems (i.e., Section C of the DESIGN) shall contain, over and above the requirements of Supplement 13 to the Decree 499/2006 on Construction Documentation, at minimum:

In Technical Report:

- Any departures in the DESIGN from the design authorized by the Construction Permit
- Compliance with conditions imposed by the Construction Permit
- List of applicable CSN (Czech national), CSN EN (EU, local implementation), IEC, or other standards, as currently in effect

In drawing section:

The drawing documentation of Functional (Sub)Systems should contain, depending on the purpose of the (sub)system in question: technical schematics, layout schematics of individual systems (machinery, electrical, control), cable run diagrams, dimensions, single-pole wiring schematics, grounding and electrocution protection schematics, other protection systems' schematics, internal and external wiring schematics for all terminals in all switchboards, cabinets, and special systems, P&I diagrams incl. measurement points, control system master configuration diagram, control panel / board surface designs, workstation layouts, control system power supply schematics, control system logic schematics, line wiring schematics, terminal schematics, location labels, switchboard plans, throttling system drawings, cabling schematics, assembly drawings, etc.

In list section:

Lists should include lists of machinery and equipment, of pipe runs, valves (incl. regulation valves), and fittings, of electrical equipment, electrical network loads, measurement circuits, active elements, automation station inputs and outputs, cables, etc.

In calculations section:

Calculations should be provided in the scope and extent required and in re-checkable form.

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Calculations should include calculations for steel frameworks, pressure elements, balance calculations, mechanical strength analyses, reliability calculations, regulation valve and throttle element (diaphragms, nozzles) calculations, energy consumption, waste heat production, voltage and short-circuit ratios, cable bandwidth use, etc.

All documentation sections need to be cross-referenced (incl. cross-linked if possible) to facilitate user orientation and efficient use.

Czech legislation mandates that calculations for steel frameworks, pressure systems, safety systems, etc. need to be performed by an Authorized or Notified Expert, as defined by said legislation.

2.4.1.6 DOCUMENTATION

Documentation produced during DESIGN work needs to be provided to the PURCHASER, including, but not limited to:

- Overview of maps and geodesic surveys used
- Documents produced during DESIGN work (e.g. authorized exceptions from CSN standards, compliance certificates, etc.)
- List of dedicated equipment
- Transcripts of design consultations, any other material documents arising from the DESIGN process, etc.

2.4.1.7 KKS MARKING REGISTRY

The KKS Marking Registry is a list of all assigned KKS rules, including system name and numbers of drawings relating to the system.

2.4.1.8 LIST OF REPLACEMENT AND RAPID-WEAR PARTS FOR TWO YEARS OF OPERATION POST-WARRANTY

As part of the DOCUMENTATION FOR EXECUTION OF THE PROJECT (the DESIGN), and pursuant to Subsection 35.3 of the CONTRACT, the CONTRACTOR will provide a list of replacement and rapid-wear parts required for two years of post-warranty operation; to be included as Supplement 12 to the CONTRACT.

Such parts are not included in the CONTRACT PRICE, and the PURCHASER reserves the right to order such parts as the PURCHASER sees fit.

The list should contain all information required to identify the part in question, as well as information on recommended replacement frequency for rapid-wear parts; at minimum, this includes:

- Part (material) identification
- Manufacturer
- Quantity
- Shipping time
- Identification data
- Replacement frequency
- Mean time to repair (MTTR)

2.5 DOCUMENTATION OF WORK-IN-PROGRESS CHANGE REQUESTS

Once DOCUMENTATION FOR EXECUTION OF THE PROJECT (the DESIGN) has been finalized, the CONTRACTOR shall prepare, and provide to the PURCHASER, all documentation required to process

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requests for changes to in-progress construction and to obtain all official approvals necessitated by potential differences between the DESIGN as executed and the preliminary design as approved in the construction permitting process (if any), or changes and approvals made and requested pursuant to the Construction Act (Act No. 183/2006) and the various Decrees implementing that Act (in particular, Decree 499/2006).

If required by the changes made, documentation shall also include a revised Building Fire Safety DESIGN (BFSD).

Note: The PURCHASER requests that, when drafting revised BFSDs, the CONTRACTOR not assume that a Corporate Fire Brigade (FB) will be present at the SITE once the WORK is operational, despite the fact that the SITE currently has one.

2.6 ACCOMPANYING TECHNICAL DOCUMENTATION

All WORK-related deliveries, including structural elements, need to be accompanied by any and all technical documentation required for transport, assembly, commissioning, operations, troubleshooting, and safe use.

This documentation is to include, but not be limited to:

- Identification information for parts supplied
- Storage requirements
- Complete and approved technical data sheets and other documents required of the CONTRACTOR by Czech legislation and standards
- Assembly documentation – all available manufacturer technical guidance for (dis)assembly, incl. drawings and diagrams
- Passports for all pressure vessels
- Passports for all pumps
- Passports for the diesel generator and related equipment
- Passports for lifting systems
- Technical requirements on shipping, assembly, and operation
- Operations, repair, and maintenance manuals
- Material documentation
- Certificates, MSDS, quality documents, Declaration of Conformity as required by the Act No. 22/1997 – the Product Technical Requirements Act, as amended and including all related and implementing legislation
- Manufacturer's wiring schematics for electrical systems (switchboards, control boards, cabinets, etc.)
- ... and others

Documentation shall be provided sorted in separate files based on whether it relates to buildings and structures, machinery, control systems, or electrical systems.

2.7 COMMISSIONING PLAN

The COMMISSIONING Plan is a document relating to the period between MECHANICAL COMPLETION and first operation; i.e., including the COMPLEX TESTS preparation period, COMPLEX TESTS, and the PERFORMANCE TEST.

The Plan needs to include functional tests, including preparations, and describe test conditions, media, temporary measures, and procedure, as well as required results.

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The Plan shall include, but not be limited to:

- Specification of default equipment parameters required for first operation
- Updates to the Inspection and Testing Plan reflecting the period between MECHANICAL COMPLETION and COMPLEX TESTS and related test programs
- Special cleaning operations for pipe runs – this mainly involves flushing, conservation, etc.
- Readiness requirements on:
 - Buildings and structures
 - Related technology
 - Electrical devices
 - Control system
- First operation procedure incl. preparations
- List of operating masses and energies required for first operation
- Personnel requirements for first operation, by system
- Line diagram showing individual activities, incl. time requirements and interactions between personnel of different specialization (structural, mechanical, electrical, control systems)
- Operational testing program
- Process calibration and optimization program

The section of the COMMISSIONING Plan relating to the period of preparations for COMPLEX TESTS should use the relevant individual tests as a departure point, and should outline, in a logical progression, the start of operations on individual functional blocks and systems.

The Plan section relating to the period of COMPLEX TESTS should detail the sequence of tests of all WORK parameters and functions.

This Plan section should also describe the manner in which TEST “A” (CONTRACTOR’s testing) will be performed.

The Plan should also include concrete requirements on the PURCHASER’s cooperation, incl. any relevant suppliers of the PURCHASER, during functional testing (power, media, personnel, etc.), as further discussed in the CONTRACT.

2.8 GUARANTEE MEASUREMENT PLAN

The GUARANTEE MEASUREMENT Plan, incl. calculations applied to guaranteed performance, measurement uncertainty, etc., needs to conform to current standards and describe GUARANTEE MEASUREMENTS for all guaranteed parameters as specified in Supplement 2 (“Guaranteed Parameters”).

The Plan should, for individual guaranteed parameter measurements, include, but not be limited to:

- List of tests and inspections to be performed, including their objectives
- Standards applicable to evaluation
- Measurement and evaluation methods
- Description of measurement methods used
- List of measurement devices used, incl. precision class and calibration curves
- List of measurement points
- Full set of correction curves and other correction data

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- List of measurement points, incl. corresponding marks in schematics
- Design of GUARANTEE MEASUREMENT connection and measurement points
- Timeline of testing and measurements

The Plan should further include drawings, including:

- Schematic of measurement points (i.e., points need to be included in schematics) – in collaboration with GUARANTEE MEASUREMENT provider
- Structural design and layout of sampling points – in collaboration with GUARANTEE MEASUREMENT provider
- Measurement structure schematic

The Plan shall further define personnel requirements for testing and requirements on PURCHASER's (incl. PURCHASER's suppliers, where relevant) cooperation during GUARANTEE MEASUREMENTS, in accordance with the provisions of the CONTRACT and of Supplement 2 ("Guaranteed Parameters") thereto.

Notes:

- 1) The GUARANTEE MEASUREMENT itself will be performed by an independent contractor hired (and paid) separately by the PURCHASER.
- 2) The CONTRACTOR should collaborate with the above-mentioned third party in preparing the Plan, so as to ensure the Plan's completeness and factual accuracy.

2.9 OPERATIONS RULES

The Operations Rules will need to cover the WORK as a whole, systems and subsystems, and individual devices, and should be written so as to enable operators to safely operate the WORK and its components across the range of normal operating conditions, while also providing operators with sufficient guidance on how to proceed in non-standard situations. Guidelines on maximizing the economic efficiency of operations should also be included.

The Rules should conform to the PURCHASER's MPP template.

The Rules should include, but not be limited to:

- Definitions of key terms
- List of abbreviations
- Concise technical description, labeling, and parameters of devices
- Drawings (incl. schematics and dimensions)
- Links among the various pieces of equipment and systems
- Safe parameter variance ranges corresponding to normal operation
- Threshold levels of non-standard operation
- Threshold levels of emergency conditions (protection system settings)
- WORK procedures for operators
- Listing of personnel responsible for operations, maintenance, and inspection of equipment
- Handling procedures for equipment
- Equipment and personnel safety, environmental safety (general and fire safety measures, etc.)
- Pre-start procedures:
 - Technical operations monitoring

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- Preparation of pipe runs and active elements, description of initial state
- Onlining of blocks, safeties, signals, and automatic control
- Full list of release and blocking conditions for all devices / systems
- Starting procedures for:
 - Cold start, incl. start after BO and GO
 - Hot start
- Activation (manual, automatic)
- Operational monitoring
- Shutdown (standard, emergency)
- Exact verbal description of binary control and regulation algorithms
- Allowed ranges for regulated parameters
- Evaluation of malfunction states, threshold value and control circuit settings
- HMI operations manual for DCS operators

The Rules should also include a separate “Lubrication Plan” for all EVO devices, structured by technical system (incl. frequency of oil changes and lubricant top-ups and specifications for oils and other lubricants; note that ideally, the number of different oil and lubricant types used should be as low as possible).

2.10 MAINTENANCE RULES

The Maintenance Rules should be the basic manual for maintenance work, replacement part sourcing, and personnel training.

The Rules should specify in detail the essential and recommended activities for BO and GO, the “Type Classification of WORKS”, and the “Deferrals Plan”, including replacement part requirements; the Rules should include, at minimum:

- Specifications of key maintenance devices
- Accessibility and interchangeability of the WORK’s elements and nodes, incl. any need for lifting equipment for repair and maintenance of key systems
- Technical procedures and requirements for repair and maintenance of key equipment
- Description of preventive and reparative maintenance; drawings and schematics required for maintenance of the various devices
- Timetables and guidelines for periodic revisions and maintenance, by device
- Lists of replacement and rapid-wear parts, incl. all data required to order such parts; for rapid-wear parts, further including recommended replacement frequency
- Special (dis)assembly procedures required for maintenance work
- Troubleshooting and defect identification guidelines
- Drawings showing areas, spaces, and access paths usable for disassembly of key systems and nodes, incl. temporary storage spaces and their maximum load capacity

For devices whose repair requires shutdown or low-power operation, the Rules should also list all device parts, including expected service life vis-à-vis planned repair (Normal or General) intervals.

Considering that control system maintenance includes maintenance on servo drives, throttles, and related electrical systems, the part of the electrical systems section of documentation relating to these systems needs to be written so as to be usable independently of the rest of the electrical

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systems documentation. Accordingly, these devices should also have separately-usable Operations and Maintenance Rules.

2.11 DOCUMENTATION REQUIRED FOR TRIAL OPERATION CLEARANCE AND CONSTRUCTION APPROVAL

The CONTRACTOR will need to procure, assemble (if originally filed with other documentation), and hand over to the PURCHASER all documents required by the Czech Building Control Office before it concedes the TRIAL OPERATION and Construction Approval of the WORK (note: these are two separate approval processes); excepted are documents whose procurement and submission the Czech Building Control Office requires from the PURCHASER (being the future Operator) pursuant to the Construction Permit.

The CONTRACTOR also needs to provide all other documents that may be requested by relevant public authorities either as part of the Construction Approval or TRIAL OPERATION approval process or at any later point.

2.12 DOCUMENTATION FOR TRAINING OF PURCHASER PERSONNEL

The CONTRACTOR provides all training materials to the PURCHASER in the Czech language. The scope of the training documentation is specified in Supplement 6 to the CONTRACT.

Operator documentation (HMI operator's manual) and the Operations and Maintenance Rules (see Supplement 6 to the CONTRACT) need to be provided in advance that personnel may be trained without delays.

2.13 DOCUMENTATION OF ACTUAL CONFIGURATION

Once the WORK has been commissioned and TRIAL OPERATION has been completed, the CONTRACTOR will need to provide the PURCHASER with documentation of the WORK's actual configuration as built; scope is specified in Supplement 14 to the CONTRACT and the Decree 499/2006.

Publication requirements on actual configuration documentation

Four (4) complete sets of actual configuration documentation, including all departures from the DESIGN, need to be handed over (with protocol) to the PURCHASER before the PAC is signed. This documentation needs to contain any and all changes made as of the time of documentation transfer. All documents need to contain the CONTRACTOR's statement that "documentation reflects the WORK's actual configuration", including the date, the CONTRACTOR's stamp, and a CONTRACTOR representative's signature. The documentation needs to also include the Situation Plan, which records the precise positions of all above- and underground utility networks and all structures (roads and buildings). The Situation Plan must meet the requirements for entry into the Czech Real Estate Registry. The PURCHASER will only sign the PAC once this documentation has been provided.

Eight (8) complete sets of the final version of the actual configuration documentation, which should further include all changes made during TRIAL OPERATION, including all source files for documents created via specialized software, need to be handed over (with protocol) to the PURCHASER once TRIAL OPERATION concludes. All documents need to contain the CONTRACTOR's statement that "documentation reflects the WORK's actual configuration", including the date, the CONTRACTOR's stamp, and a CONTRACTOR representative's signature.

This documentation should also include a current version of the Replacement and Rapid-Wear Parts List corresponding to two years of post-warranty operation.

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. No.:	Supplement 3 – Documentation	Ref. No.:

3. QUANTITY, FORMAT, AND LANGUAGE OF CONTRACTOR-PROVIDED DOCUMENTATION

Documentation needs to have a unified and comprehensible format and conform to engineering best practice. The CONTRACTOR should ensure that any documentation provided by SUBCONTRACTORS matches the format and labeling scheme of the remainder of WORK documentation.

All documents handed over by the CONTRACTOR need to bear a header stamp (stamp template to be provided by the PURCHASER).

No document may contain any clause that would limit the PURCHASER in any way from using the documentation as intended, nor bind the PURCHASER to request the CONTRACTOR's approval for any such use (see also Subsection 17.3-a of the CONTRACT). All documents found to contain such clauses will be returned to the CONTRACTOR for amendment.

All documents should use *système international* (SI) units only. Drawing scale needs to conform to applicable technical standards and best practices. All drawings need to include a scale bar. In drawings produced in a reduced size, legibility must always be maintained.

3.1 DOCUMENT QUANTITIES

All documentation discussed above should be handed over to the PURCHASER only once approved, and as approved; quantities of printed identical counterparts as follows:

Section	Documentation type	Approval draft	Final version
2.1	Administration Rules	3	3
2.2	Documentation Plan (PLTD)	3	3
2.3	Quality Documentation	2	2
2.4	DOCUMENTATION FOR EXECUTION OF THE PROJECT (the DESIGN), incl. SITE Facility DESIGN	3	6
2.5	In-progress design change request documentation	3	8
2.6	Accompanying technical documentation	1	3 originals
2.7	COMMISSIONING Plan	3	6
2.8	GUARANTEE MEASUREMENT Plan	3	6
2.9	Operations Rules	3	3
2.10	Maintenance Rules	3	3
2.11	Construction Approval and TRIAL OPERATION approval documentation	-	3
2.12	PURCHASER personnel training documentation	2	appropriate to personnel trained
2.13	WORK actual configuration documentation (incl. List of Replacement and Rapid-Wear Parts and Situation Plan)	1	4 + 8 (see 2.13 above)

The same number of copies will also be provided digitally on flash drives (one copy – one drive), formatted and ordered as specified in Section 3.2.2 below.

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Ref. No.:	Supplement 3 – Documentation	Ref. No.:

3.2 DOCUMENTATION FORMAT

3.2.1 PRINTED

Printed documents and drawings need to conform to CSN standards in their formatting. Text documents should be on A4 size paper; other documents should preferentially be on A4 or A3 size paper.

Large paper formats should be used for drawings; these need to be foldable to a size that can be filed in an A4 size binder.

If design elements are added to existing documents, the original formatting should be preserved.

Drawing originals (master copies) should be high-quality prints (incl. paper / material) made on laser, inkjet, or plotter printers.

3.2.2 ELECTRONIC

3.2.2.1 FILE FORMAT

Drawings should be in native AutoCAD Rel. 2004 or earlier format (DWG, DXF).

Text documents should be in native MS Word 2007 or later format (DOC, DOCX).

Databases, tables, and lists should be in native MS Excel 2007 or later format (XLS, XLSX).

Timetables should be in native MS Project 2007 format (MPP), with a copy in PDF format.

Graphics files (any photo documentation that may be included with technical specifications) should be in JPG format.

Scans should be in PDF format.

All electronic documents should be unlocked (i.e., not password-protected or otherwise access-restricted); the PURCHASER should be able to further process (edit, copy, print, convert to other formats, etc.) all documents if required.

Documentation should be editable and no compatibility-limiting add-ons (e.g. CADELEC) should be used.

Documents not conforming to the above will be returned to the CONTRACTOR for reformatting.

Documents that the CONTRACTOR itself does not have available in editable form (e.g. data sheets, inspection reports, etc.) shall be exempted from the above.

Any and all non-standard fonts, libraries, styles (line, shading, plotting, etc.), and other elements required for proper and complete display need to be included with the electronic documentation.

3.2.2.2 FILING SYSTEM FOR ELECTRONIC DOCUMENTS

Electronic documents created as part of the WORK should be handed over to the PURCHASER on USB flash drives.

Flash drives should be numbered (ascending); the number needs to be indicated on the drive casing.

File names and directory structure should facilitate quick, simple, and unambiguous navigation and file identification (incl. general contents).

A directory structure with verbal directory names and comprehensible file names should therefore be used.

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All media provided should contain a file (called *Obsah.doc* or *Obsah.xls* – note *Obsah* is Czech for “Contents”) illustrating the directory structure used and listing file names and paths, with a brief description of file contents.

3.3 DOCUMENTATION LANGUAGE

All documentation shall be provided in the Czech language. Drawing annotations are acceptable in English if a legend with Czech translations is provided.

The only exception allowed by the PURCHASER is for documentation of control system hardware and software and for originals of data sheets for imported goods; these may be in English (but no other foreign language).

Czech translations need to be provided for equipment certificates.

4. LABELING

The PURCHASER requires that equipment be labeled in the KKS rules system.

The coding scheme selected should be unified across the entire body of documentation and all equipment supplied and should be consistent with the labeling of the existing devices.

5. DOCUMENTATION APPROVAL

The CONTRACTOR will need to prepare and submit to the PURCHASER for approval, in line with the agreed schedule, the documentation required for the WORK.

The CONTRACTOR should hand over documentation as it becomes due pursuant to the timetable given in the CONTRACT and in Section 7 below.

All documentation submitted for approval will include a cover letter listing the documents being submitted.

Any subsequent versions and revisions of previously-approved documentation should contain a list of changes from the most recent approved version. Such changes should be implemented as revisions (text documents, lists) or highlighted by bubbles (drawings).

The PURCHASER shall be obligated to either return to the CONTRACTOR an approved copy or to inform the CONTRACTOR in writing that approval was not issued, including the reasons, within ten (10) business days of recorded receipt of any documentation submitted for approval. Documentation may, if so agreed between the parties, be approved by written statement only without returning a copy to the CONTRACTOR.

If the documentation submitted by the CONTRACTOR for approval, or a significant subset thereof (e.g. SO, IO, PS), is incomplete, this limits the PURCHASER's ability to properly assess the documentation; the PURCHASER will, in that case, inform the CONTRACTOR to this effect without delay, and the 10-day approval period will be reset once the PURCHASER has received the additional documentation / explanation of omissions. The same procedure will apply if a submission cannot be approved due to errors, contradictions, departures from the CONTRACT, or other non-conformities being found; in this case, the PURCHASER will inform the CONTRACTOR and request resolution of the issues found and subsequent re-submission.

If the PURCHASER declines to issue approval for reasons consistent with the terms of the CONTRACT, the CONTRACTOR will need to resolve the issues given by way of reason and re-submit the documentation in question. The approval process will then function as outlined above, but the PURCHASER may only decline to approve re-submissions for reasons of (i) issues found in material changed from previous submissions; or (ii) issues in other (incl. previously approved)

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
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parts of the documentation that are impacted by new changes, but fail to adequately address the PURCHASER's concerns given by way of reason for the PURCHASER's previous refusal to approve the documentation.

Documentation portions to which the PURCHASER had no objection (i.e., which were not a contributing factor in a refusal to approve) shall be considered "approved in principle"; i.e., the CONTRACTOR will be able to perform works based on these portions.

The PURCHASER may only refuse to approve documentation for reasons of conflict with the CONTRACT or non-conformity with engineering best practice.

The PURCHASER's approval of any documentation (whether on first submission or with changes) does not exempt the CONTRACTOR from any of its duties under the CONTRACT, and the CONTRACTOR remains responsible for the contents of the documentation.

The deadlines for documentation submission given in the CONTRACT apply to approved documentation. Any delays in the WORK caused by the CONTRACTOR's failure to have documentation approved within the expected timeframe are wholly the responsibility of the CONTRACTOR.

6. DATA PROVIDED BY PURCHASER

Aside from data, drawings, and other documentation included in the CONTRACT, the CONTRACTOR shall further receive a single Czech-language copy of each of the following:

- Design documentation from the construction permitting process (incl. electronic copy); Construction Permit as issued, incl. any conditions and requirements imposed therewith by the Czech Building Control Office and / or other Czech public authorities
- Available land and terrain surveys
- Available actual condition documentation wherever the CONTRACTOR's work will connect to existing PURCHASER equipment

7. DOCUMENTATION SUBMISSION DEADLINES

All documentation processed by the CONTRACTOR should be submitted to the PURCHASER by the deadlines given in Subsection 10.1 of the CONTRACT.

PURCHASER-provided documentation will be handed over as follows:

Document	handed over to CONTRACTOR
Design documentation for construction permitting, incl. statements from authorities	no later than upon CONTRACT signing
Construction Permit and other official documents	no later than 7 days from date of legal effect
Actual condition documentation of existing PURCHASER equipment CONTRACTOR's work will link to (where available)	no later than 15 days from CONTRACTOR's request

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK Supplement 4 – Timetable and Execution Plan for the WORK	CONTRACTOR
Ref. no.:		Ref. no.:

SUPPLEMENT 4

TIMETABLE AND EXECUTION PLAN FOR THE WORK

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 4 – Timetable and Execution Plan for the WORK	Ref. no.:

*Tender participants need to provide the following **Supplement 4 – Timetable and Execution Plan for the WORK** as part of File C4 of their Indicative Tenders / Tenders (being a supplement to the CONTRACT FOR WORK) in compliance with the Contracting Authority's instructions for the contents of File C4 contained in Part 4 of the Procurement Documents.*

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Ref. no.:		Ref. no.:

SUPPLEMENT 5

PURCHASER COOPERATION

PURCHASER United Energy. a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 5 – PURCHASER's Cooperation	Ref. no.:

*Tender participants need to provide the following **Supplement 5 – PURCHASER's Cooperation** as part of File C5 of their Indicative Tenders / Tenders (being a supplement to the CONTRACT FOR WORK) in compliance with the Contracting Authority's instructions for the contents of File C5 contained in Part 4 of the Procurement Documents.*

PURCHASER United Energy. a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK Supplement 5 – PURCHASER's Cooperation	CONTRACTOR
Ref. no.:		Ref. no.:

Pursuant to Section 12.8 of the CONTRACT, the PURCHASER shall provide the CONTRACTOR with cooperation in the extent given below.

All prices given below are valid for 2018 and are exclusive of VAT.

Place of service provision – PURCHASER'S premises, on existing connection points.

PURCHASER United Energy. a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK Supplement 5 – PURCHASER's Cooperation	CONTRACTOR
Ref. no.:		Ref. no.:

1. Spaces (offices and accessories) for rent:

Building 13

Floor 1	m2	CZK/m2/year	CZK/month	Required by Contractor
Office 1	13.6	250.21	283.57	
Office 2	13.6	250.21	283.57	
Office 3	13.8	250.21	287.74	
Office 4	13.8	250.21	287.74	
Office 5	13.6	250.21	283.57	
Office 6	13.6	250.21	283.57	
Office 7	12.6	250.21	262.72	
Office 8	18	250.21	375.32	
Restroom 1	4.9	170.6	69.66	
Restroom 2	4.9	170.6	69.66	
Restroom 3	4.9	170.6	69.66	
Hallway	19.7	193.35	317.42	
Offices total				
Restrooms total				
Hallway				
Total rent				

Floor 2	m2	CZK/m2/year	CZK/month	Required by Contractor
Office 1	n/a			
Office 2	13.8	250.21	287.74	
Office 3	13.8	250.21	287.74	
Office 4	13.6	250.21	283.57	
Office 5	13.8	250.21	287.74	
Office 6	13.6	250.21	283.57	
Office 7	12.6	250.21	262.72	
Office 8	18	250.21	375.32	
Restroom 1	4.9	170.6	69.66	
Restroom 2	4.9	170.6	69.66	
Restroom 3	4.9	170.6	69.66	
Hallway	19.7	193.35	317.42	
Offices total				
Restrooms total				
Hallway				
Total rent				

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Building 43

Floor 2	Floor 2	m2	CZK/m2/year	Required by Contractor
Office 1	11	250,21 Kč	229,36 Kč	
Office 2	13,5	250,21 Kč	281,49 Kč	
Office 3	16,2	250,21 Kč	337,78 Kč	
Office 4	11	250,21 Kč	229,36 Kč	
Office 5	35	250,21 Kč	729,78 Kč	
Office 6	11	250,21 Kč	229,36 Kč	
Office 7	11	250,21 Kč	229,36 Kč	
Office 8	16,7	250,21 Kč	348,21 Kč	
Office 9	30,7	250,21 Kč	640,12 Kč	
Office 10	11,6	250,21 Kč	241,87 Kč	
Office 11	14,9	250,21 Kč	310,68 Kč	
Office 12	16	250,21 Kč	333,61 Kč	
Restroom 1	4,7	170,60 Kč	66,82 Kč	
Restroom 2	9,3	170,60 Kč	132,22 Kč	
Restroom 3	3,7	170,60 Kč	52,60 Kč	
Shower room	11,6	170,60 Kč	164,91 Kč	
Hallway	62,4	193,35 Kč	1 005,42 Kč	
Total	198,6			

Offices total				
Restrooms total				
Hallway				
Total rent				

PURCHASER United Energy. a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK Supplement 5 – PURCHASER'S Cooperation	CONTRACTOR
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Note 1: Restrooms shall be calculated according to the number of offices rented in the following manner:

1 - 3 offices	at least 1x restroom
4 - 6 offices	at least 2x restrooms
7 or more offices	3 x restrooms

Spaces in the building 13 can be used as locker rooms, the locker rooms shall be fitted with lockers by the CONTRACTOR.
If the spaces are used as locker rooms, the rent shall include the shower room.

Note 2: Yellow fields are for Participants to fill in when preparing their Indicative Tenders / Tenders.

2. Spaces rented under Item 1 in building 13 above shall further be subject to charges for:

Heating	Monthly charge calculated as: $m^2 \times 367.34 \times 0.8/12$ ($m^2 \times \text{price per GJ} \times \text{coefficient} / \text{year}$)

Potable water	Flat fee per person (CZK 100 / person / month).

Electricity	as consumed	price per kWh: CZK 4.22 (2018 prices)	Will be charged at prices current in year of consumption

Czech Energy Regulation Authority's electricity price list for 2018, per ERU 7-8/2017					
Rate: C02d	3x170A breaker	3x150A breaker	3x80A breaker	3x25A breaker	1x16A breaker
consumption charge (CZK / kWh)	4.22	4.22	4.22	4.22	4.75
infrastructure charge (CZK)	778	735	370	117	15

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3. Other spaces for rent:

TKY Facility

	m2	CZK/m2/year	Required by Contractor 1)
Exterior 2)	4,000 m ²	55.85	

Notes:

- 1) Yellow fields are for Participants to fill in when preparing their Indicative Tenders / Tenders.
- 2) Exterior area of 4,000 m² located in Unit 94/19 of the Komořany Land Register – see schematic below. Currently, the surface is unpaved. In the event of use for materials storage, reinforcement will be required (concrete panels, ground stone, etc.). If such use of the land is required, reinforcement costs shall be borne, and works performed, by the Contractor.



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4. **Spaces rented under Item 1 (building 43) and under Item 3 above (if the construction containers are connected) shall further be subject to charges for:**

Location	Hot water & central heating	Potable water	Sewage charge
TKY	CZK 367.34 / GJ	CZK 43.46 / m ³	CZK 42.34 / m ³
AB	CZK 508.00 / GJ		
SEKUNDER	CZK 498.47 / GJ		

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Ref. no.:	Supplement 6 – Training	Ref. no.:

SUPPLEMENT 6

TRAINING

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 6 – Training	Ref. no.:

*Tender participants need to provide the following **Supplement 6 – Training** as part of File D6 of their Indicative Tenders / Tenders (being a supplement to the Draft CONTRACT FOR WORK) in compliance with the Contracting Authority's instructions for the contents of File D6 contained in Part 4 of the Procurement Documents.*

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 6 – Training	Ref. no.:

1. The CONTRACTOR shall provide training for PURCHASER personnel required to operate and maintain the WORK; at minimum:

Position	Number of personnel
Technologist	3
Staff Boiler Room Technician (STK)	6
Staff Electrical Technician (STE)	8
Desulfurization Operator	4
Boiler Room Maintenance Technician (PZ_K)	4
Electromechanical Systems Technician	14
Measurement and Regulation Technician	4
Electrical Technician	3
Technology Maintenance Technician	10
Staff Engineer (needs to be familiar with wet desulfurization principles and linkages to existing systems)	6

The CONTRACTOR shall provide programmer training for all types of information and control systems supplied and orientation training for all related documentation, for a total of 8 trainees.

The CONTRACTOR shall provide intelligent systems (configurator) operation and maintenance training for supplied measurement and regulation systems and orientation training for all related documentation, for a total of 8 trainees.

2. The CONTRACTOR acknowledges that the PURCHASER may nominate representatives of third parties who are providing services for the execution of the WORK, and / or will provide operation and / or maintenance services once the WORK is completed, to participate in any of the above listed courses.
3. PURCHASER personnel shall be trained to handle all tasks relevant to their job description as it relates to the operation and maintenance of the work; a training protocol shall be signed to that effect.
4. Group courses shall be organized so as to cover the full scope of the technology employed that is relevant to attendees' activities in relation to the WORK. Staff employees work shifts and therefore shall be trained in groups of on-shift colleagues.
5. Course groups shall not be larger than 10 trainees, and courses shall take up no more than 8 hours per day, including necessary breaks.
6. All training costs shall be included in the CONTRACT PRICE. Training shall take place preferentially at United Energy, a.s. premises and courses shall be held in Czech; if interpreting is required, the CONTRACTOR shall engage interpreters with adequate background in technical language.
7. In the event that, due to technology and equipment supply considerations, PURCHASER personnel are trained off-site, the CONTRACTOR shall bear all costs relating thereto. The PURCHASER shall cover personnel travel and room (if any) and board expenses, and provide reasonable discretionary funds.

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Ref. no.:	Supplement 6 – Training	Ref. no.:

8. The CONTRACTOR shall ensure training is completed no later than 14 DAYS before the start of COMMISSIONING (preparation for Complex Tests).
9. The CONTRACTOR shall provide trainees with all relevant study materials, in the Czech language, no later than 30 DAYS before the start of training. For operator training, system operation and maintenance rules and operator manuals shall be made available in sufficient advance.
10. Furthermore, in the interest of ensuring preparedness for the future operation and maintenance of the WORK, selected PURCHASER personnel shall have opportunity (with prior notice to the CONTRACTOR) to be present during CONTRACTOR works on assembly and Commissioning, with no further compensation being due to the CONTRACTOR in relation thereto.

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK Supplement 7 – List of SUBCONTRACTORS	CONTRACTOR
Ref. No.:		Ref. No.:

SUPPLEMENT 7

LIST OF SUBCONTRACTORS

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK Supplement 7 – List of SUBCONTRACTORS	CONTRACTOR
Ref. No.:		Ref. No.:

*Tender participants need to provide **Supplement 7 – List of SUBCONTRACTORS** as part of File C7 of their Indicative Tenders / Tenders (being a supplement to the CONTRACT FOR WORK) in compliance with the Contracting Authority's instructions for the contents of File C7 contained in Part 4 of the Procurement Documents.*

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 8 – Template for Bank Guarantees for the WORK and for the Deposit	Ref. no.:

SUPPLEMENT 8

TEMPLATE FOR BANK GUARANTEES FOR THE WORK AND FOR THE DEPOSIT

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 8 – Template for Bank Guarantees for the WORK and for the Deposit	Ref. no.:

*Tender participants need to provide the following **Supplement 8 – Template for Bank Guarantees for the WORK and for the Deposit** as part of File C8 of their Indicative Tenders / Tenders (being a supplement to the CONTRACT FOR WORK) in compliance with the Contracting Authority's instructions for the contents of File C8 contained in Part 4 of the Procurement Documents.*

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 8 – Template for Bank Guarantees for the WORK and for the Deposit	Ref. no.:

BANK GUARANTEE FOR THE WORK – TEMPLATE

For: United Energy, a.s.,

2 Teplárenská, 434 03 Most-Komořany, Czech Republic, Business Registration no.: 273 09 959.

BANK GUARANTEE FOR WORK no. (Certificate of Guarantee)

Whereas, our client (*Contractor name, address, and business registration no.*)

.....
(hereinafter, the "Contractor")

has been awarded your public contract "Environmental Improvements on TKY II Heating Plant – Wet Desulfurization",

whereas, the Contractor is required by the Contract for Work of *[date of contract]*, Purchaser reference no....., Contractor reference no....., which provides for the execution of the Public Contract specified above, to submit to you a bank guarantee for the execution of the Work issued by a first-class bank for the amount specified in the Contract for Work, by way of guarantee for the Contractor's performance of its obligations under the Contract made between yourselves and the Contractor,

whereas, we have agreed to provide the bank guarantee requested by the Contractor in the scope and on the terms given in the Contract for Work,

now therefore, by the Contractor's mandate, we,

(*name of bank*).....,

registered address,

(hereinafter, the "Bank")

hereby agree to be expressly, unconditionally, and irrevocably bound by responsibility as guarantor in relation to the above named Contract for Work to you, that is, to United Energy, a.s., registered address 2 Teplárenská, 434 03 Most-Komořany, Czech Republic, Business Registration no.: 273 09 959, up to the amount of:

CZK 00 (*[amount in words] Czech koruna*)

and to pay to you, without objection and without review of the legal circumstances between yourselves and the Contractor, upon your first binding signed written request, any amount or amounts up to the total value given above, without requiring cause or justification to be given by you, within 10 calendar days from the receipt of your written request.

For reasons of identification, we shall require any requests you may make in relation to the above to be signed by an authorized signatory of your company, with the signature verified by your bank or notarized.

We hereby surrender our right to recovery from the Contractor before your request is satisfied. Furthermore, we acknowledge that no change, amendment, or modification of the terms of the

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 8 – Template for Bank Guarantees for the WORK and for the Deposit	Ref. no.:

Contract or the Work to be realized thereunder, or of any Contract documents that may be in effect between yourselves and the Contractor, relieves us of any of our responsibilities under this Guarantee, and we hereby surrender our right to notification of such changes, amendments, and modifications.

Without regard for any rights the Contractor may have with respect to yourselves, or for any proceedings the Contractor may bring against you in any court of law, we shall hold your written request as sufficient proof that the payment being requested is in accordance with your Contract, and we shall consider such requests binding.

This Guarantee is issued under the law of the Czech Republic and shall expire on; any requests you may make of us need to be delivered to us at the address given above no later than on the last day of the Guarantee's duration.

Upon expiry of this Guarantee, we shall remain obligated to pay to you any and all amounts you may have requested from us while the Guarantee was in effect and that remain outstanding.

You may not assign your rights to claims under this Guarantee. You may not assign or collateralize your rights to payments under this Guarantee without our prior written consent.

Finally, we hereby warrant and represent that, as of the day of issue of this Guarantee, our creditworthiness is rated by Standard & Poor's at (your requirement being, no lower than A–).

In on

.....
(Bank stamp and signature)

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 8 – Template for Bank Guarantees for the WORK and for the Deposit	Ref. no.:

BANK GUARANTEE FOR THE DEPOSIT – TEMPLATE

For: United Energy, a.s.,

2 Teplárenská, 434 03 Most-Komořany, Czech Republic, Business Registration no.: 273 09 959.

BANK GUARANTEE FOR DEPOSIT no. (Certificate of Guarantee)

Whereas, the Contract for Work of [*date of contract*], Purchaser reference no....., Contractor reference no....., for the execution of your public contract “Environmental Improvements on TKY II Heating Plant – Wet Desulfurization” (hereinafter, the “Work”),

made between our client, (*Contractor name, address, and business registration no.*), as the Contractor, and yourselves as the Purchaser, requires the Contractor to submit to the Purchaser, as security for the advance payment of a deposit, a bank guarantee for the Deposit in the amount of

CZK 00 (*guarantee amount: same as Deposit amount*)

(*[amount in words] Czech koruna*),

now therefore, by the Contractor’s mandate, we,

(*name and registered address of bank*).....,

hereby agree to provide the above specified Guarantee and to be expressly, unconditionally, and irrevocably bound to pay to you, without objection and without review of the legal circumstances between yourselves and the Contractor, upon your first signed written notice of the Contractor’s failure to meet its obligations under the Contract for the execution of “Environmental Improvements on TKY II Heating Plant – Wet Desulfurization” (hereinafter, the “Request”), any amount or amounts up to the total value given above, without requiring cause or justification to be given by you.

For reasons of identification, we shall require any Requests you may make in relation to the above to be signed by an authorized signatory of your company, with the signature verified by your bank or notarized.

We hereby surrender our right to recovery from the Contractor before your request is satisfied. Furthermore, we acknowledge that no change, amendment, or modification of the terms of the Contract or the Work to be realized thereunder, or of any Contract documents that may be in effect between yourselves and the Contractor, relieves us of any of our responsibilities under this Guarantee, and we hereby surrender our right to notification of such changes, amendments, and modifications.

Without regard for any rights the Contractor may have with respect to yourselves, or for any proceedings the Contractor may bring against you in any court of law, we shall hold your written Request as sufficient proof that the payment being requested is in accordance with your Contract, and we shall consider such requests binding.

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant – Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. no.:	Supplement 8 – Template for Bank Guarantees for the WORK and for the Deposit	Ref. no.:

This Guarantee is valid upon provision and effective upon payment of the Deposit as specified in the Contract, i.e., when the Contractor's account no. with [contractor bank] has been credited for the entire Deposit amount of CZK 00, with Variable Symbol payment routing number

This Guarantee is issued under the law of the Czech Republic and shall expire on; any requests you may make of us need to be delivered to us at the address given above no later than on the last day of the Guarantee's duration.

Upon expiry of this Guarantee, we shall remain obligated to pay to you any and all amounts you may have requested from us while the Guarantee was in effect and that remain outstanding.

You may not assign your rights to claims under this Guarantee. You may not assign or collateralize your rights to payments under this Guarantee without our prior written consent.

Finally, we hereby warrant and represent that, as of the day of issue of this Guarantee, our creditworthiness is rated by Standard & Poor's at (your requirement being, no lower than A–).

In on

.....
(Bank stamp and signature)

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization DRAFT CONTRACT FOR WORK Supplement 9 – Price Specification	CONTRACTOR
Ref. No.:		Ref. No.:

SUPPLEMENT 9

PRICE SPECIFICATION

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 9 – Price Specification	Ref. No.:

*The following **Supplement 9 - Price Specification** shall be completed/finalized by the contractor/participant and submitted in Volume C9 of the Preliminary Offer/Offer (as a supplement to the CONTRACT FOR WORK) in accordance with the purchaser's instructions for processing of Volume C9 contained in Part 4 of the Tender Documentation.*

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 9 – Price Specification	Ref. No.:

Table 1)

DETAILED WORK PRICE SPECIFICATION				
ITEM	ACTIVITY / ITEM / SO/IO, PS/DPS/ (SO – building structures, IO – utility systems, PS – process system, DPS – process subsystem)	SUPPLY [CZK WITHOUT VAT]	ASSEMBLY [CZK WITHOUT VAT]	ITEM TOTAL [CZK WITHOUT VAT]
1.	WORK documentation	.....	X	.....
	consisting of:			
1.1	DOCUMENTATION FOR THE EXECUTION OF THE PROJECT	.....	X	.....
1.2	As-built documentation	.....	X	.....
1.3	Other documentation according to Supplement 3 to the CONTRACT	.....		.....
2.	Civil part of the WORK	.....	X	.....
	consisting of:			
2.1	SO 01 - Desulfurization	.....	X	.....
2.2	SO 02 – Limestone suspension preparation	.....	X	.....
2.3	SO 03 – Substation	.....	X	.....
2.4	SO 04 – Production and shipment of energo gypsum	.....	X	.....
2.5	SO 05 – Energo gypsum storage	.....	X	.....
2.6	SO 06 – Dry ash loading station	.....	X	.....
2.7	SO 07 – Foundations of steel structures and technological equipment	.....	X	.....
2.8	SO 08 – Demolition of part of ZV OSE building	.....	X	.....
2.9	SO 09 – Pumping station building	.....	X	.....
2.10	SO 10 – Elevator building	.....	X	.....
2.11	SO 11 – Emergency tank	.....	X	.....
2.12	SO 12 – Electrical wiring for buildings	.....	X	.....

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 9 – Price Specification	Ref. No.:

DETAILED WORK PRICE SPECIFICATION				
ITEM	ACTIVITY / ITEM / SO/IO, PS/DPS/ (SO – building structures, IO – utility systems, PS – process system, DPS – process subsystem)	SUPPLY [CZK WITHOUT VAT]	ASSEMBLY [CZK WITHOUT VAT]	ITEM TOTAL [CZK WITHOUT VAT]
2.13	IO 01 – Roads and paved surfaces	.....	X	.....
2.14	IO 02 – Utilities	.....	X	.....
2.15	IO 03 - Electrical connection	.....	X	.....
2.16	IO 04 – External lighting	.....	X	.....
3.	WORK process systems	.....	.....	.....
	consisting of:			
3.1	PS 01 – Limestone handling	.....	.....	.....
	consisting of:			
3.1.1	• DPS 01.1 - Ground limestone (storage, transportation, dosing)	.....	.....	.....
3.1.2	• DPS 01.2 - Limestone suspension (preparation, transportations to ABS, pipes))	.....	.....	.....
	consisting of:			
	- Limestone preparation mixers	.....	.....	.....
3.2	PS 02 – Flue gas ducts	.....	.....	.....
	consisting of:			
3.2.1	• DPS 02.1 - Flue gas ducts	.....	.....	.....
	consisting of:			
	- Flue gas duct lining	.....	.....	.....
	- Flue gas dust insulation			
3.2.2	• DPS 02.2 - Flue gas duct flaps			
3.2.3	• DPS 02.3 - Booster fan			

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Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 9 – Price Specification	Ref. No.:

DETAILED WORK PRICE SPECIFICATION				
ITEM	ACTIVITY / ITEM / SO/IO, PS/DPS/ (SO – building structures, IO – utility systems, PS – process system, DPS – process subsystem)	SUPPLY [CZK WITHOUT VAT]	ASSEMBLY [CZK WITHOUT VAT]	ITEM TOTAL [CZK WITHOUT VAT]
3.2.4	• DPS 02.4 – Wet stack	.....	.....	.....
	consisting of:			
	- Air traffic warning system day/night	.....	.....	.....
3.3	PS 03 – Desulfurization	.....	.....	.....
	consisting of:			
3.3.1	• DPS 03.1- Absorber, tank, droplet separator	.....	.....	.....
	consisting of:			
	- Absorber inserts, droplet separator	.....	.....	.....
	- Absorber rubber lining	.....	.....	.....
	- Insulation - absorber	.....	.....	.....
3.3.2	• DPS 03.2 - Suspension circulation	.....	.....	.....
3.3.3	• DPS 03.3 – Tank mixing	.....	.....	.....
3.3.4	• DPS 03.4 – Oxidation air	.....	.....	.....
3.3.5	• DPS 03.5 - Ancillary equipment, backup source	.....	.....	.....
3.4	PS 04 – Operation tanks	.....	.....	.....
	consisting of:			
3.4.1	• DPS 04.1 - Gypsum suspension tank 15%	.....	.....	.....
3.4.2	• DPS 04.2 - Gypsum suspension tank 55%, hydrocyclone	.....	.....	.....
3.4.3	• DPS 04.3 - Water accumulation tank	.....	.....	.....
3.4.4	• DPS 04.4 - Absorber emptying circuit			
3.4.5	• DPS 04.5 - Process water circuit (rinsing and cooling)			

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DETAILED WORK PRICE SPECIFICATION				
ITEM	ACTIVITY / ITEM / SO/IO, PS/DPS/ (SO – building structures, IO – utility systems, PS – process system, DPS – process subsystem)	SUPPLY [CZK WITHOUT VAT]	ASSEMBLY [CZK WITHOUT VAT]	ITEM TOTAL [CZK WITHOUT VAT]
3.4.6	• DPS 04.6 - Operation tanks emptying circuit	.....	.....	.....
3.4.7	• DPS 04.7 – Technological accessories	.....	.....	.....
3.5	PS 05 – Stabilizate mixing center	.....	.....	.....
	consisting of:			
3.5.1	• DPS 05.1 - Pneumatic transportation (ash, lime)	.....	.....	.....
3.5.2	• DPS 05.2 - Pipeline systems (gypsum suspension, water)	.....	.....	.....
3.5.3	• DPS 05.3 - Stabilizate mixing and shipment	.....	.....	.....
3.5.4	• DPS 05.4 - Technological accessories	.....	.....	.....
3.6	PS 06 – Energo gypsum production	.....	.....	.....
	consisting of:			
3.6.1	• DPS 06.1 – Vacuum filter, vacuum station	.....	.....	.....
3.6.2	• DPS 06.2 - Energo gypsum loading equipment	.....	.....	.....
3.6.3	• DPS 06.3 - Energo gypsum shipment	.....	.....	.....
3.6.4	• DPS 06.4 - Other accessories (mixers, pumps, conveyors)	.....	.....	.....
3.7	PS 07 – Dry ash loading	.....	.....	.....
	consisting of:			
3.7.1	• DPS 07.1 - Dry ash route to fly ash silos	.....	.....	.....
3.7.2	• DPS 07.2 - Fly ash shipment silos	.....	.....	.....
3.8	PS 08 - Pipe bridges, technological OK (steel structures)	.....	.....	.....
3.9	PS 09 - Other pipe distribution systems	.....	.....	.....
3.10	PS 10 - Upgrade of fabric filters	.....	.....	.....

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 9 – Price Specification	Ref. No.:

DETAILED WORK PRICE SPECIFICATION				
ITEM	ACTIVITY / ITEM / SO/IO, PS/DPS/ (SO – building structures, IO – utility systems, PS – process system, DPS – process subsystem)	SUPPLY [CZK WITHOUT VAT]	ASSEMBLY [CZK WITHOUT VAT]	ITEM TOTAL [CZK WITHOUT VAT]
3.11	PS 11 - High voltage operational distribution system	.....	.....	
3.12	PS 12 - EPS	.....	.....	.....
3.13	PS 13 - Low voltage distribution systems	.....	.....	.....
3.14	PS 14 – Measuring and control, central control room expansion	.....	.....	.....
3.15	PS 16 - Lime storage and transportation route	.....	.....	.....
3.16	PS 17 - Raw and saline water route	.....	.....	.....
4.	Project publicity according to valid “Applicant and Beneficiary Rules“	.....	X	.....
5.	COMMISSIONING INCLUDING TESTS AND CERTIFICATIONS	.....	X	.....
TOTAL CONTRACT WORK PRICE without VAT		.....	.....	.....

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 9 – Price Specification	Ref. No.:

Table 2)

DESCRIPTION OF CONTRACTOR'S ACTIVITIES from the date of CONTRACT execution until the CONTRACT enters into force, pursuant to Section 56.3 of the CONTRACT		
ITEM	DESCRIPTION OF CONTRACTOR'S ACTIVITIES	PRICE TOTAL [CZK without VAT]
1.	Prepare Project administrative code according to the CONTRACT.	
2.	Prepare Documentation creation plan (PLTD) according to the CONTRACT.	
3.	Prepare Quality assurance documentation according to the CONTRACT.	
4.	Verify and evaluate currently existing and perform potential additional surveys, obtain documents, data and information required for the processing of the DOCUMENTATION FOR THE EXECUTION OF THE PROJECT (DESIGN) according to the CONTRACT.	
5.	Prepare DOCUMENTATION FOR THE EXECUTION OF THE PROJECT (DESIGN) of <u>the civil part of the WORK</u> according to the CONTRACT.	
6.	Prepare DOCUMENTATION FOR THE EXECUTION OF THE PROJECT (DESIGN) of the <u>process technology part of the WORK</u> according to the CONTRACT.	
7.		
8.		
9.		
10.		
Price total without VAT		.....

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 10 – Roadmap of Key Work Milestones and Prices	Ref. No.:

SUPPLEMENT 10

ROADMAP OF KEY WORK MILESTONES AND PRICES

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 10 – Roadmap of Key Work Milestones and Prices	Ref. No.:

*The following **Supplement 10 - Roadmap of Key Work Milestones and Prices** shall be completed/finalized by the contractor/participant and submitted in Volume C10 of the indicative tender/tender (as a supplement to the CONTRACT FOR WORK) in accordance with the purchaser's instructions for processing of Volume C10 contained in Part 4 of the Tender Documentation.*

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 10 – Roadmap of Key Work Milestones and Prices	Ref. No.:

Roadmap of Key Work Milestones and Prices

Table 1

SCHEDULE OF ADVANCE PAYMENTS				
Payment title	Anticipated term for advance payment invoice issuance	PERCENTAGE CONTRACT PRICE PAYMENT without VAT		Performance conditions for payment
		%	(in thousand CZK)	
1st advanced payment	in accordance with Section 14.4 (a) of the CONTRACT	15	.....	In accordance with Section 14.4 (a) of the CONTRACT

Table 2

SCHEDULE OF PARTIAL PAYMENTS FOR CONTRACT PRICE				
Payment title	Anticipated term for invoice issuance for partial project performance	Percentage CONTRACT PRICE payment without VAT		Performance conditions for payment
		%	(in thousand CZK)	
1st Partial payment (based on progress and material WORK implementation)	8 / 2019	2	.....	MILESTONE I Handing over approved DOCUMENTATION FOR THE EXECUTION OF THE PROJECT (DESIGN) of the civil part of the WORK (in order of the last finished SO/IO design) and confirmation of milestone performance by the PURCHASER in accordance with the CONTRACT.
2nd Partial payment (based on progress and material WORK implementation)	11 / 2019	3	.....	MILESTONE II Handing over approved DOCUMENTATION FOR THE EXECUTION OF THE PROJECT (DESIGN) of the process technology part of the WORK (in order of the last finished PS/DPS) and confirmation of milestone performance by the PURCHASER in accordance with the CONTRACT.
3rd Partial payment (based on progress and material WORK implementation)	5 / 2020	40	.....	MILESTONE III Building readiness for process equipment installation (payment after completion of the last implemented SO 01 to 09 and SO 11 to SO 12 and confirmation of milestone performance by the PURCHASER in accordance with the CONTRACT.

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 10 – Roadmap of Key Work Milestones and Prices	Ref. No.:

SCHEDULE OF PARTIAL PAYMENTS FOR CONTRACT PRICE				
Payment title	Anticipated term for invoice issuance for partial project performance	Percentage CONTRACT PRICE payment without VAT		Performance conditions for payment
		%	(in thousand CZK)	
4th Partial payment (based on progress and material WORK implementation)	1 / 2021	30	.....	MILESTONE IV Signing of protocol on WORK MECHANICAL COMPLETION according to the CONTRACT and confirmation of milestone performance by the PURCHASER in accordance with the CONTRACT.
5th Partial payment (final invoice for WORK)	7 / 2021	25		MILESTONE V Signing of protocol on WORK PROVISIONAL ACCEPTANCE according to the CONTRACT and confirmation of milestone performance by the PURCHASER in accordance with the CONTRACT.
TOTAL without VAT		100%		

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Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 11 – Contractors' Code of Conduct	Ref. No.:

SUPPLEMENT 11

CONTRACTORS' CODE OF CONDUCT

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 11 – Contractors' Code of Conduct	Ref. No.:

*The following **Supplement 11 - Contractors' Code of Conduct** (Guideline SM-UE-1805 "Contractors' Code of Conduct ") shall be provided by the contractor/participant in Volume C11 of the Preliminary Offer/Offer (as a supplement to the CONTRACT FOR WORK) in accordance with the purchaser's instructions for processing of Volume C11 contained in Part 4 of the Tender Documentation.*

The text of the Guideline No. SM-UE-1805 "Contractors' Code of Conduct", including the annexes, is available in the procurement documents in the Czech language only.

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Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 11 – Contractors' Code of Conduct	Ref. No.:

The CONTRACTOR undertakes, in accordance with the provisions of sections 11.5 and 22.1 of the CONTRACT, to comply with the PURCHASER's internal regulation – Guideline No. SM-UE-1805 "Contractors' Code of Conduct".

United Energy, a.s. Teplárenská 2 434 03 Most - Komořany	Směrnice č. SM-UE-1805	Vydáno dne: 1. 8. 2018
Zpracovatel: Ing. Paterová Daniela (vedoucí útvaru bezpečnosti a životního prostředí)	Pravidla chování zhotovitelů	Garant: Ing. Boháček Milan (generální ředitel)
Přílohy: 4	Nahrazuje: SM-UE-1202	Účinnost od: dnem vydání

V zájmu zajištění bezpečnosti a ochrany zdraví při práci, požární ochrany, ochrany životního prostředí a majetku společnosti a s přihlédnutím k tomu, že smluvní partneři společnosti jako objednatelé vykonávají své činnosti na pozemcích, v areálech, pronajatých prostorech, technologiích a zařízeních v jejím vlastnictví nebo jiné majetkové správě

vydávám

Pravidla chování zhotovitelů

Článek I.

I.A ÚVODNÍ USTANOVENÍ

I.A.1 Tato Pravidla chování zhotovitelů ve společnosti (dále jen „Pravidla“) jsou závazná při realizaci činností v případech, kdy společnost vystupuje v příslušné smlouvě jako objednatel takových činností (dále jen „objednatel“). Pravidly se stanovují podmínky pro činnost zhotovitelů, kteří se s vědomím objednatele zdržují na jeho pracovištích, pracují na jeho majetku nebo svou činností mohou majetek objednatele ovlivnit. Pravidla platí přiměřeně na právnické nebo fyzické osoby, které jsou vůči společnosti v nájemním vztahu (areál, objekty společnosti). Přitom platí, že odchylná ujednání ve smlouvě na danou činnost (případně nájem) mají přednost před ustanovením těchto Pravidel, pokud jsou taková ujednání výslovná a určí, která ustanovení Pravidel (určena číselně nebo slovně) jsou odlišná.

I.A.2 Odborné práce a činnosti, které nemá zhotovitel zapsány ve svém obchodním rejstříku nebo živnostenském listě, provede poddodavatel s odpovídající odbornou způsobilostí. Doklady o odborné způsobilosti poddodavatele, úředně ověřené, předloží zhotovitel objednateli před zahájením prací. V případě, že bude nutno provést změnu poddodavatele, jehož prostřednictvím prokazoval zhotovitel část kvalifikace v zadávacím řízení, je zhotovitel povinen nahradit takového poddodavatele pouze takovým subjektem, který rovněž splňuje prokazovanou část kvalifikace.

I.A.3 Před zahájením prací je zhotovitel povinen prokazatelně seznámit své zaměstnance s těmito Pravidly. Pokud zhotovitel v rámci plnění svých smluvních závazků pověří výkonem pracovních činností

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poddodavatele, pak nese zodpovědnost za dodržování těchto Pravidel tak, jako by pracovní činnost prováděl sám.

I.A.4 Zhotovitel je plně zodpovědný objednateli za jakékoliv škody způsobené porušením povinností zhotovitele v rámci provádění sjednané činnosti i mimo ni, jakožto i za škody způsobené jeho poddodavatelem, tj. přímou i následnou škodu a ušlý zisk, úhradu sankčního postihu uloženého kontrolními orgány státní nebo veřejné správy. Jedná se zejména, avšak nejen, o škody způsobené na majetku movitým i nemovitým fyzikálními, chemickými, popř. biologickými vlivy.

I.A.5 Kontrolu dodržování Pravidel kontrolují pověřeni zaměstnanci objednatele (vedoucí zaměstnanci, zaměstnanci odpovědní za činnosti na technických zařízeních, dozoruji zaměstnanci uvedení ve smluvním vztahu, zaměstnanci útvaru bezpečnosti a životního prostředí), které se při kontrole prokáží identifikační kartou.

I.A.6 Vedoucí zaměstnanec nebo zodpovědný zaměstnanec kontrolovaného pracoviště zhotovitele (nájemce) je povinen umožnit pověřenému kontrolujícímu zaměstnanci (objednatel, pronajímatele) přístup do všech prostorů kontrolovaného pracoviště při dodržení příslušných provozních předpisů, předpisů bezpečnosti práce, požární ochrany a ochrany životního prostředí, ke všem dokumentům a záznamům spojených s předmětem kontroly. Všichni zaměstnanci na kontrolovaném pracovišti jsou povinni poskytnout vyčerpávající a pravdivé informace požadované kontrolujícím zaměstnancem.

I.A.7 Nedodržování Pravidel je považováno za podstatné porušení smluvních povinností a opravňuje objednatel k odstoupení od smlouvy se zhotovitelem, případně k uplatnění smluvní pokuty vůči zhotoviteli podle vnitřního předpisu Smluvní pokuty za porušení bezpečnostních, hygienických, protipožárních a ekologických předpisů, který je součástí smluvní ustanovení.

I.B VÝKLAD UŽITÝCH POJMŮ, ZKRATEK A ZNAČEK; NÁVAZNOST NA DOKUMENTY A PRÁVNÍ PŘEDPISY

I.B.1 Výklad užitých pojmů

objednatel, společnost	- United Energy, a.s.; Severočeská teplárenská, a.s.; United Energy Invest; EVO-Komořany, a.s.; Gabit, s.r.o.
odpovědný zaměstnanec objednatele	- zaměstnanec objednatele pověřený ve smlouvě řízením realizace a průběžnou kontrolou provádění díla, technickým dozorem apod., těmito činnostmi může být ve smlouvě pověřena i jiná osoba, než zaměstnanec objednatele (OZ, TDO)
koordinátor BOZP na staveništi	- odborně způsobilá osoba pro koordinaci práce jedné stavby s více zhotoviteli
areál, areály objednatele	- prostory a objekty (pozemky, stavební objekty, technická a technologická zařízení) ve vlastnictví nebo jiné majetkové správě objednatele
vnitřní předpis objednatele	- závazný předpis, který podrobně stanovuje způsob provádění specifických činností ve společnosti objednatele
zhotovitel	- smluvní strana; právnická nebo fyzická osoba provádějící práce pro objednatele v souladu se smlouvou
vedoucí práce zhotovitele	- zaměstnanec zhotovitele, který je pověřený vedoucím zaměstnancem zhotovitele řízením pracovní činnosti na konkrétním pracovišti
technický dozor objednatele	- zaměstnanec objednatele, pověřený řízením realizace a průběžnou kontrolou provádění díla
poddodavatel, subdodavatel	- právnická nebo fyzická osoba, která na základě smluvního vztahu se zhotovitelem plní jeho úkoly vyplývající ze smlouvy s objednatelem v areálu objednatele. Poddodavatel (výraz podle nového Občanského zákoníku) je obsahově totožný s výrazem subdodavatel, který je používán v již vydaných předpisech společnosti.

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- odpovědný zástupce zhotovitele** - osoba určená zhotovitelem odpovědná za řízení činnosti zhotovitele v areálu objednatele
- zaměstnanci zhotovitele** - zaměstnanci zhotovitele i jeho případných poddodavatelů, kteří plní úkoly zhotovitele vyplývající ze smlouvy s objednatelem v areálu objednatele
- smlouva** - smlouva o dílo, objednávka mezi objednatelem a zhotovitelem, kupní smlouva, nájemní smlouva, rámcová smlouva a jiné typy smluvních ujednání
- bezpečnostní podmínka** - podmínka pro činnost zhotovitele v areálu objednatele stanovená k zajištění požární ochrany, bezpečnosti práce a ochrany životního prostředí, objednatelem písemně stanovená v obchodní smlouvě.
- nesoulad** - nesplnění bezpečnostní podmínky (případně jiných podmínek) stanovené ve smlouvě nebo ve vnitřních předpisech objednatele
- identifikační karta** - technické zařízení sloužící k identifikaci držitele při průchodu vrátnicí do/z areálu objednatele; rovněž k identifikaci zaměstnance zhotovitele
- podnikající fyzická osoba** - fyzická osoba vykonávající podnikatelskou činnost podle zvláštních právních předpisů, např. podle živnostenského zákona
- požárně technická charakteristika** - vlastnost látky vyjádřená měřitelnou hodnotou nebo stanovená na základě měřitelných hodnot více dílčích vlastností anebo jev vystihující chování látky při procesu hoření nebo s ním související
- správa majetku (zařízení)** - výkon vlastnických práv a povinností, zejména povinnosti udržovat majetek (zařízení) v užitelném stavu a účelnými opravami, údržbou, rekonstrukcí a modernizací ovlivňovat proces morálního a fyzického opotřebení majetku (zařízení)
- úniková cesta** - trvale volná komunikace, popř. komunikační prostor umožňující bezpečnou evakuaci osob z objektu ohroženého požárem nebo z jeho části na volné prostranství, popř. využitelná i pro přístup jednotek hasičského záchranného sboru do prostorů napadených požárem
- předané pracoviště** - pracoviště předané objednatelem zhotoviteli podle zákona o zajištění dalších podmínek bezpečnosti a ochrany zdraví při práci, kterým se upravují další požadavky bezpečnosti a ochrany zdraví při práci v pracovněprávních vztazích a o zajištění bezpečnosti a ochrany zdraví při činnosti nebo poskytování služeb mimo pracovněprávní vztahy, ve znění pozdějších předpisů; též předané staveniště definované ve stavebním zákoně
- příkaz k provedení práce** - písemný dokument o nařízených technických a organizačních opatřeních sloužících k zajištění bezpečnosti při práci na vyhrazených a vyjmenovaných zařízeních (elektrických, strojních, plynových, tlakových, tepelných) nebo v jejich blízkosti a k provedení vyjmenovaných činností s cílem zamezit vzniku požáru nebo výbuchu s následným požárem: **příkazy B** (elektro), **BS** (strojní), **P** (plyn) a **V** (požár/výbuch)
- zaměstnanci objednatele pověřeni kontrolou** - pověřený zaměstnanec objednatele (vedoucí zaměstnanci, zaměstnanci odpovědní za činnosti na technických zařízeních, dozoruji zaměstnanci uvedení ve smluvním vztahu, zaměstnanci útvaru bezpečnosti a životního prostředí, OZ, TDO)

I.B.2 Výklad použitých zkratk

zkratka	výklad
BOZP	Bezpečnost a ochrana zdraví při práci
HZS	Hasičský záchranný sbor (obecně)

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JHZSP	Jednotka hasičského záchranného sboru objednatele
OOPP	Osobní ochranné pracovní prostředky
OZ	Zodpovědná osoba objednatele
PO	Požární ochrana
SI	Směnový inženýr
ST	Směnový technik
TDO	Technický dozor objednatele

I.B.3 Návaznost na právní předpisy

Významné právní předpisy jsou uvedeny ve stručném přehledu v **příloze č. 1** s tím, že zahrnují rovněž neuvedené navazující a související předpisy v platném znění, včetně prováděcích předpisů a platných technických norem ve všech oblastech ochrany zdraví, bezpečnosti práce, požární ochrany, ochrany životního prostředí a majetku společnosti. Tímto informativním přehledem není dotčena povinnost vždy použít aktuální předpisy.

I.B.4 Návaznost na vnitřní předpisy společnosti (objednatele)

I.B.4.1 Pravidla chování zhotovitelů jsou zpracována v souladu s platnými vnitřními předpisy objednatele. V **příloze č. 2** je uveden informativní přehled názvů dotčených vnitřních předpisů objednatele, ze kterých Pravidla pro zhotovitele vycházejí anebo na které je v textu odkazováno.

I.B.4.2 Za seznámení zhotovitele s dotčenými platnými vnitřními předpisy objednatele pro danou smluvní činnost zodpovídá zodpovědný zaměstnanec objednatele.

I.B.4.3 Na odevzdaném pracovišti je povinen zhotovitel seznámit objednatele a další zhotovitele s dalšími požadavky bezpečnosti práce obsaženými v projektu případně příslušné dokumentaci.

I.B.4.4 Pravidly není dotčena povinnost vždy použít ke dni předání pracoviště aktuálně platné obecně závazné právní předpisy, technické předpisy, požadavky orgánů státního odborného dohledu a vnitřní předpisy zaměstnavatele týkající se provádění smluvních činností nebo zajištění bezpečnosti a ochrany života a zdraví osob, požární ochrany, bezpečnosti a ochrany majetku a životního prostředí.

Článek II.

ŠKOLENÍ ZAMĚSTNANCŮ, EVIDENCE, VSTUP A VJEZD

II.1 EVIDENCE A ŠKOLENÍ ZAMĚSTNANCŮ

II.1.1 Všechny osoby, které provádějí práce nebo se zdržují na pracovištích, v prostorech, na zařízení a pozemcích objednatele musí být před zahájením prací proškoleni z předpisů bezpečnosti a ochrany zdraví při práci, požární ochrany a ochrany životního prostředí.

II.1.2 Zaměstnanci zhotovitele musí být odborně i zdravotně způsobilí pro výkon smluvních prací.

II.1.3 Zhotovitel písemně určí zaměstnance odpovědného za dodržování předpisů bezpečnosti práce, požární ochrany a životního prostředí.

II.1.4 V případě, že zhotovitel zaměstnává cizí státní příslušníky zajišťuje pro potřeby bezpečnostního školení u objednatele tlumočníka. Na pracovištích objednatele zajistí trvalou přítomnost v českém jazyce komunikujícího odpovědného zaměstnance, který komunikaci s cizinci ovládá.

II.1.5 Zhotovitel je povinen vést a průběžně aktualizovat reálný seznam všech subdodavatelů včetně jejich podílu na realizaci předmětu smlouvy. Tento přehled bude průběžně předávat objednateli.

II.1.6 Při prvním nástupu zhotovitele k objednateli si zaměstnance zhotovitele převezme ve vrátnici pověřený zaměstnanec objednatele (dle smlouvy) a odvede je na útvar bezpečnosti a životního prostředí, kde bude provedeno vstupní školení. Školení je prováděno v pracovní dny od 8.00 do 10.00 hodin, po předchozí dohodě lze výjimečně školení přizpůsobit potřebám zhotovitele.

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II.1.7 Zaměstnancům zhotovitele bude po provedeném školení útvaru bezpečnosti a životního prostředí vystavena „Identifikační karta“. Bez této karty nebudou vpuštěni do areálů objednatele. Každý zaměstnanec v areálech objednatele je povinen nosit viditelně identifikační kartu a je povinen ji kdykoli předložit zaměstnancům pověřeným kontrolou na jejich vyzvání. Identifikační karty si vyzvedává zaměstnanec zhotovitele osobně nebo odpovědný zástupce zhotovitele na útvaru bezpečnosti a životního prostředí proti podpisu a zodpovídá za jejich vrácení po ukončení platnosti přístupu nebo po ukončení smluvní činnosti.

II.1.8 Školení zaměstnanců zhotovitele na příslušných pracovištích objednatele (podle smlouvy) provede vedoucí zaměstnanec objednatele zodpovědný za toto pracoviště.

II.1.9 Platnost školení je vždy jeden rok od data předchozího školení. Před skončením platnosti musí zaměstnanci zhotovitele (obchodního partnera) absolvovat periodické školení. Minimálně dva týdny před uplynutím platnosti školení, požádá zhotovitel o provedení periodického školení.

Platnost vjezdu vozidel je vždy na dobu 1 roku od data posledního školení řidiče. Minimálně dva týdny před skončením platnosti musí odpovědný zástupce zhotovitele (obchodního partnera) požádat o periodické povolení vjezdu vozidla.

II.1.10 Odpovědný zaměstnanec zhotovitele předává do útvaru bezpečnosti a životního prostředí objednatele kopii dokladu o následných proškoleních BOZP zaměstnanců pro příslušné pracoviště/staveniště objednatele. Bez řádného školení je práce v areálu, v objektech a zařízeních objednatele zakázána.

II.1.11 Zhotovitel odpovídá za vrácení všech identifikačních karet objednatele bez poškození. V případě ztráty nebo poškození zhotovitel uhradí identifikační kartu dle aktuální nákupní ceny.

V případě ukončení smluvního vztahu je zhotovitel povinen vrátit objednateli všechny vydané identifikační karty pro jeho zaměstnance (nebo jeho poddovatele) a vozidla. Pokud zhotovitel pokračuje ve smluvním vztahu s objednatelům nepřetržitě, je povinen průběžně vracet tyto identifikační karty, u kterých neprodloužil roční lhůtu platnosti.

Při nevrácení identifikační karty se postupuje dle sazby smluvní pokuty.

II.1.12 Všichni zaměstnanci zhotovitele musí mít pracovní oděvy označeny logem nebo názvem obchodní firmy zhotovitele, alternativně osazeny odnímatelnou identifikační kartou zhotovitele (obsahuje minimálně název firmy).

II.1.13 Je výslovně zakázáno neoprávněné užívání identifikační karty jinou osobou, než které byla vydána pro pohyb v areálu a objektech objednatele nebo pro průjezd motorového vozidla.

II.1.14 Zpracování osobních dat zaměstnanců zhotovitele je v souladu platnými právními předpisy a je upraveno vnitřním předpisem objednatele Projekt ochrany osobních údajů (technicko-organizační opatření, zajištění ochrany osobních údajů ve společnostech) a Ochrana osobních údajů GDPR. Informace o nakládání s osobními údaji zaměstnanců zhotovitele tvoří součást vstupního školení.

II.2 OCHRANA MAJETKU A INFORMACÍ

II.2.1 Přenášení a převážení materiálu

II.2.1.1 Všechny osoby, které vstupují do nebo odcházejí z areálů a objektů objednatele, jsou povinny, na výzvu zaměstnance bezpečnostní služby (ostrahy), připravit všechna zavazadla k nahlédnutí. Zaměstnanci bezpečnostní služby jsou povinni při kontrole dodržovat právní, hygienické a ostatní předpisy.

II.2.1.2 Všechny osoby, které vjíždějí do nebo vyjíždějí z areálů a objektů objednatele, jsou povinny, na výzvu zaměstnance bezpečnostní služby, umožnit kontrolu prostor vozidla. Zaměstnanci bezpečnostní služby jsou povinni při kontrole dodržovat právní, hygienické a ostatní předpisy.

II.2.1.3 Při navážení nářadí, přístrojů, materiálů apod., předá zhotovitel na vrátnici úplný seznam těchto věcí. Bez tohoto seznamu mu nebude umožněn vjezd do areálu ani následný výjezd (odvoz) nářadí, přístrojů, materiálů apod.

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II.2.1.4 Vnášení střelných zbraní, výbušnin a radioaktivních látek bez vědomí objednatele je výslovně zakázáno.

II.2.2 Vstup, vjezd, parkování

II.2.2.1 Zaměstnanci zhotovitele se mohou pohybovat pouze v určených prostorech objednatele. V případě potřeby pohybu v jiných prostorech pouze se souhlasem zodpovědného zaměstnance objednatele.

II.2.2.2 Vstup zahraničních návštěv zhotovitele do areálů, objektů a zařízení je povolen pouze s písemným souhlasem vedení společnosti.

II.2.2.3 Parkování vozidel zhotovitele uvnitř areálu objednatele je povoleno pouze na vyhrazených odstavných plochách. Pro všechny řidiče platí přísný zákaz jízdy a stání mimo prostory k tomuto účelu.

II.2.2.4 Pro jednorázový průjezd osobních nebo nákladních vozidel do areálu nebo průchod zaměstnanců postupuje ostraha (bezpečnostní služba) v souladu se Zásadami ochrany objektů a majetku společnosti. Zaměstnancům zhotovitele nebo návštěvám je vydána jednorázová identifikační karta s příslušnými pokyny o parkování a odstavování vozidel v areálu.

II.2.2.5 V případě, že zaměstnanci zhotovitele přijíždějí na staveniště/pracoviště objednatele motorovým vozidlem, jsou povinni z vozidla vystoupit a projít turnikety pro pěší a učinit záznam o příchodu do areálu.

II.2.2.6 Povolení k vjezdu osobních vozidel po dobu smluvního vztahu s objednatelem vydává útvar bezpečnosti a životního prostředí objednatele na základě schválené žádosti o povolení k vjezdu cizích vozidel od OZ, TDO nebo jiného pověřeného zaměstnance objednatele.

II.2.2.7 V areálu je povolená rychlost motorových vozidel 20 km/h. Zaměstnanci zhotovitele s uděleným povolením k průjezdu a parkování motorových vozidel musí přizpůsobit jízdu vozidla a respektovat dopravní značení tak, aby nezpůsobili dopravní nehodu nebo poškození přístupových zařízení (závora, turniket atd.).

II.2.3 Vnější odstavné plochy

II.2.3.1 Na vnějších odstavných plochách mohou zaměstnanci a návštěvníci zhotovitele odstavit dopravní prostředky pouze na místa vyznačená dopravními značkami nebo vymezené dopravním značením na komunikaci. Tato odstavná plocha není hlídaným parkovištěm a za případné škody na majetku nezodpovídá objednatel. Před hlavní vjízdou do areálu v Komořanech je zakázáno stát i zastavit vozidlo mimo místa vyznačená na komunikaci. Při porušení tohoto zákazu mohou zaměstnanci strážní služby dotyčného vykazat, případně zjistit jeho totožnost a předají případ k dořešení na útvar bezpečnosti a životního prostředí objednatele.

II.2.3.2 Příjezdové cesty pro hasiče musí být dodrženy trvale volné průjezdné šířky příjezdových komunikací nejméně 3 m k objektům, k nástupním plochám pro požární techniku a ke zdrojům vody určeným k hašení požárů (viz **příloha č. 3 – Příjezdové cesty – hasiči**).

II.2.3.3 Řidiči s povolením parkovat v areálu objednatele jsou povinni respektovat ochranná pásma železnic a produktovodů.

II.2.3.4 Řidiči parkující v areálu objednatele jsou povinni svá vozidla zabezpečit proti krádeži a neodstavovat vozidla bez příslušného povolení v areálu objednatele po 22 hodině.

II.2.4 Organizace nakládky vedlejších energetických produktů ve výrobních úseku – areál Komořany

II.2.4.1 Komunikace, která vede k nakládce granulátu je označena dopravními značkami. Jedná se o směrové tabule, na kterých je vyznačen nápis „**NAKLÁDÁNÍ GRANULÁTU**“. Dopravní značky navedou řidiče až ke světelné signalizaci pro nakládku granulátu.

II.2.4.2 Na příjezdové cestě v zadním traktu areálu objednatele je instalována světelná signalizace pro řízení nájezdu nákladních automobilů (souprav) k nakládce. Pro signalizaci je použito jedno zelené světlo, které je umístěno na sloupu před administrativní budovou.

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II.2.4.3 Všichni řidiči jsou povinni při stání vypnout motor.

II.2.4.4 Význam signalizace: Světlo zhaslé = STOP; Světlo svítí (zeleně) = jedno nákladní auto najede do prostoru nakládání granulátu.

II.2.4.5 Organizace nakládání:

Před uvedením technologie nakládání do provozu (světlo zhaslé) se nákladní automobily seřazují u světelné signalizace v řadě za sebou. Po uvedení technologie nakládání do provozu a stabilizaci kvality granulátu dá obsluha signál (rozsvítí zelené světlo) k pojezdu jednoho auta k nakládání.

Při rozsvícení tohoto světla popojede do prostoru nakládání granulátu pouze jedno auto. Časový spínač ponechá světlo rozsvícené po dobu cca 30 vteřin. Po njetí auta dá obsluha další signál pro njetí druhého auta k nakládání. Znamená to tedy, že v prostoru nakládání budou vždy max. 2 auta a všechna další budou seřazena až za světelnou signalizací.

II.2.4.6 Pro všechny řidiče platí po dobu čekání přísný zákaz údržby vozidel. V areálu objednatele se nesmí provádět žádná údržba vozidel včetně mytí, doplňovat pohonné hmoty, čerpat voda z horkovodů, vodovodních přípojek užitkové i pitné vody a další činnosti na vozidle, při kterých by mohlo dojít ke vzniku nebezpečných odpadů anebo k úniku závadných látek (např. ropných).

II.2.4.7 V případě úniku nenadálého úniku závadných látek do zeminy, na komunikaci nebo do kanalizačních vpustí, musí řidiči tuto skutečnost okamžitě nahlásit směnovému inženýrovi a zodpovědnému zaměstnanci útvaru bezpečnosti a životního prostředí.

II.2.4.8 Provedená opatření objednatelem a náklady spojené s odstraněním příčin a následků úniku závadných látek budou účtovány zhotoviteli.

II.2.4.9 Prostor před signalizací snímá průmyslová kamera, která umožňuje kontrolu dodržování výše uvedených pravidel. O ochraně majetku pomocí kamerových systémů jsou řidiči informováni při vjezdu do areálu objednatele.

II.2.4.10 Pokud by došlo k porušení pravidel nakládky, řidič bude okamžitě bez nakládky granulátu vykázán z areálu objednatele, bude zaevidována jeho registrační značka vozidla a nebude mu umožněn další vjezd do areálu.

II.2.4.11 Zákaz kouření se vztahuje i na kabiny motorových vozidel v areálu.

II.2.5 Práce na staveništích v areálu i mimo uzavřený areál objednatele, včetně rozvodů tepla

II.2.5.1 Provádění prací v kolektorech, výměňkových stanicích a na rozvodech tepla je možné pouze v souladu příslušnými Místními provozními předpisy objednatele, které se k danému pracovišti vztahují a se kterými je zhotovitel objednatelem seznámen.

II.2.5.2 Pro práce na pracovištích (staveništích) rozvodů tepla respektuje zhotovitel tyto specifické požadavky:

- Zhotovitel je povinen po celou dobu realizace využívat jen předané vymezené pracovní prostory (vytyčené staveniště), které budou označeny názvem firmy a jménem zodpovědné osoby, vč. telefonního kontaktu. Pracoviště/staveniště musí zhotovitel zabezpečit po celou dobu realizace díla.

- Zhotovitel je povinen skladovat výrobky a montážní zařízení na pracovišti bezpečně a nezávadně.

- Zhotovitel plně odpovídá za ostrahu prováděného díla a veškerých výrobků a dodávek na pracovišti, včetně protipožární ochrany, a to až do doby přechodu nebezpečí škody na zhotovovaném díle ze zhotovitele na objednatele. Objednatel neodpovídá za případnou škodu způsobenou ztrátou, zničením nebo poškozením majetku zhotovitele, který používá k provádění díla. Zhotovitel je povinen tento svůj majetek zabezpečit a mít jej důsledně vždy pod svou ochranou a kontrolou.

- Zhotovitel až do konečného předání pracoviště po ukončení prací zodpovídá za bezpečné zajištění pracoviště vůči okolnímu provozu a chodcům. Zhotovitel je povinen zajistit přenosné osvětlení, ostrahu, oplocení, osazení bezpečnostních značek, výstražných nápisů a provedení bezpečnostních opatření pro ochranu pracoviště, materiálu a techniky dopravených zhotovitelem na pracoviště.

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- V případě provádění výkopových prací, zejména pak za účelem oprav tepelných vedení v otevřeném topném kanále, je vždy nutno zabezpečit výkop v souladu s platnou legislativou a normami
- Zhotovitel je povinen zajistit dostatečné množství zdravotnického materiálu pro poskytování první pomoci na pracovišti.
- Zhotovitel je povinen udržovat pracoviště (staveniště) uklizené a bezpečné, přiměřeně volné od všech překážek. Na pracovišti (staveništi) nebude shromažďován jakýkoliv odpad a zbytky, které nebudou dále využívány nebo nebudou potřebné při provádění díla.
- Zhotovitel je povinen zajistit úklid komunikací v místě provádění díla, jestliže dojde k jejich znečištění v důsledku jeho činností při provádění díla. Komunikace musí být uklizeny po jejich znečištění bez zbytečného odkladu a to způsobem zamezujícím vniknutí látek ohrožujících jakost a kvalitu povrchových vod do kanalizačních vpustí (chemické a ropné látky).
- Zhotovitel prokazatelně (včetně zápisu do stavebního deníku) seznámí své poddodavatele s danými podmínkami.
- Zhotovitel vyklidí a odstraní do termínu předání díla z pracoviště všechny přebytečné materiály, odpady, zbytky, montážní zařízení apod. Jen tak bude dílo převzato.

II.2.6 Ochrana dalších oprávněných zájmů

II.2.6.1 Odnášení či odvážení písemných materiálů nebo nosičů dat objednatele označených stupněm „Obchodní tajemství United Energy, a.s.“ nebo „Dokument s omezeným přístupem United Energy, a.s.“ z areálu objednatele je možné pouze s písemným povolením podepsaným generálním ředitelem objednatele, v jeho nepřítomnosti vedoucí útvaru bezpečnosti a životního prostředí objednatele.

II.2.6.2 Odnášení či odvážení jiných písemných materiálů nebo informací na nosičích dat ve vlastnictví společnosti je zakázáno.

II.2.6.3 Jestliže si objednatel se zhotovitelem při jednání navzájem poskytnou informace označené jako obchodní tajemství, nesmí je strana, které byly tyto informace poskytnuty, prozradit třetí osobě a ani je použít v rozporu s jejich účelem pro své potřeby, a to bez ohledu na to, zda dojde k uzavření smlouvy či nikoli.

II.2.6.4 Zhotovitel se při realizaci smluvních činností musí chovat tak, aby nedošlo k poškození majetku společnosti, zejména podzemních i nadzemních elektrických zařízení, produktovodů, železniční vlečky a komunikací.

II. 2.6.5 Zhotovitel jako dopravce zajišťuje nakládku, přepravu a dopravu materiálů, zařízení a ostatních výrobků tak, aby nedošlo k porušení platných předpisů pro silniční nebo železniční přepravu.

II.2.6.6 Zhotovitel zodpovídá za škody vzniklé na jeho či pronajatém majetku, popřípadě majetku převzatého (materiál, zařízení atd.) a je povinen přijmout taková opatření k zabezpečení tohoto majetku, která ztíží či znemožní jeho zcizení či poškození. Jedná se o uzamykání svěřených prostor, uzamykání aut včetně nádrží, uklizení náradí do uzamykatelných beden apod. V případě, že je zjištěno, že byly odcizeny osobní věci zaměstnance zhotovitele nebo majetek patřící zhotoviteli, popř. řádně pronajatý zhotoviteli, je zaměstnanec zhotovitele povinen toto nahlásit Policii ČR a útvaru bezpečnosti a životního prostředí. Případné pojistné události řeší zhotovitel na základě vlastní pojistné smlouvy s příslušnou pojišťovnou.

II.2.6.7 Fotografování a filmování v areálu objednatele je možné pouze na základě žádosti, kterou schvaluje generální ředitel, ředitel společnosti nebo vedoucí útvaru bezpečnosti a životního prostředí.

II.2.6.8 Zhotovitelé jsou při vstupním školení informováni a berou na vědomí, že ochrana majetku je zajišťována pomocí kamerových systémů.

Článek III.

ZÁSADY BEZPEČNOSTI A OCHRANY ZDRAVÍ PŘI PRÁCI

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III.1 Zhotovitel je povinen přijmout veškerá opatření k prevenci rizik a to ve vztahu k vlastním zaměstnancům, k zaměstnancům objednatele, jiných zhotovitelů a poddodavatelů. Prevencí rizik se rozumí všechna opatření, která vyplývají z právních a ostatních předpisů k zajištění bezpečnosti a ochrany zdraví při práci (dále jen BOZP) a z opatření jakéhokoli zaměstnavatele, která mají za cíl předcházet rizikům, odstraňovat je nebo minimalizovat působení neodstranitelných rizik.

III.2 Dále je zhotovitel povinen dodržovat zásady bezpečnosti a ochrany zdraví při práci (dále jen „Zásady“) uvedené v následujících ustanoveních.

III.3 Základní povinnosti

III.3.1 Plní-li na jednom pracovišti úkoly zaměstnanci dvou a více zaměstnavatelů, jsou zaměstnavatelé podle příslušných ustanovení zákoníku práce, povinni vzájemně se písemně informovat o rizicích možného ohrožení života a zdraví zaměstnanců týkajících se práce a pracovišť (dále jen „rizika“) a vzájemně spolupracovat při zajišťování bezpečnosti a ochrany zdraví při práci. V opodstatněných případech je objednatel povinen zajistit funkci koordinátora BOZP stavby se všemi souvisejícími povinnostmi (ohlašování, zpracování Plánu atd.).

III.3.2 Zhotovitelé a poddodavatelé jsou povinni předat písemnou (elektronickou) formou rizika vyplývající z jejich činnosti na útvar bezpečnosti a životního prostředí před zahájením prací, kde jim budou předána písemnou (elektronickou) formou rizika vyplývající z předaného pracoviště dle Katalogu rizik objednatele.

III.3.3 Zhotovitel a jeho poddodavatelé jsou povinni jmenovat písemně zodpovědného zaměstnance pro bezpečnost práce, který bude odpovědný za dodržování všech bezpečnostních předpisů. Jeho jméno bude uvedeno v montážním či stavebním deníku.

III.3.4 Každý ze zaměstnavatelů (zhotovitelů nebo jejich poddodavatelů) je přitom povinen:

- zajistit, aby jeho činnosti a práce jeho zaměstnanců byly organizovány a prováděny tak, aby současně byli chráněni také zaměstnanci dalšího zaměstnavatele,
- spolupracovat při zajištění bezpečného, nezávadného a zdraví neohrožujícího pracovního prostředí pro všechny zaměstnance na pracovišti.

III.3.5 Na převzatých pracovištích zhotovitel zajišťuje péči o BOZP samostatně ve smyslu platných, obecně závazných předpisů a je odpovědný za dodržování ustanovení těchto předpisů a za škody, které vzniknou jeho provozní činností. Převzatá pracoviště včetně pronajatého prostoru jsou předanými pracovišti zhotovitele po celou dobu plnění předmětu díla až do zpětného převzetí objednatelem.

III.3.6 Zhotovitel nezahájí práce do doby, než budou určeny hranice pracoviště a způsob jejich vytýčení, označení inženýrských sítí, způsob zajištění technologií, které by bezprostředně mohli ohrozit zaměstnance zhotovitele nebo jiných zaměstnanců.

III.3.7 Zaměstnanci zhotovitele, případně třetí osoby, kteří se budou pohybovat v areálu objednatele, musí být zřetelně označeni. Zaměstnanci zhotovitele případně třetí osoby nesmí vstupovat do prostorů a objektů, které nejsou předmětem plnění smlouvy. Pro vstup do sociálních zařízení a kantýny mohou používat jen komunikace, které jim byly určeny objednatelem.

III.3.8 Zaměstnanci zhotovitele musí být při zahájení prací vybaveni OOPP, které potřebují pro výkon své práce. Za vybavení zaměstnanců zodpovídá jejich zaměstnavatel.

III.3.9 V ostatních prostorech provozů objednatele dbá zhotovitel pokynů a bezpečnostních opatření objednatele a zaměstnanci zhotovitele jsou povinni používat osobní ochranné prostředky, zejména potom přilbu a reflexní vestu.

III.3.10 Zaměstnanci zhotovitele nebudou vpuštěni do areálů, objektů, pracovišť v případě, že u nich došlo požití alkoholu nebo omamných látek a jsou povinni se podrobit příslušné zkoušce na zjištění alkoholu nebo omamné látky.

III.3.11 Zhotovitel případně třetí osoba bere na vědomí zákaz kouření a požívání alkoholických nápojů a jiných návykových látek v prostorech objednatele, vstup do těchto prostor pod vlivem alkoholu a jiných

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návykových látek a donášení alkoholických nápojů a návykových látek na pracoviště. Porušení tohoto zákazu zaměstnanci a zástupci zhotovitele je vždy hrubé porušení podmínek zhotovitelem příp. třetí osobou a důvodem pro udělení zákazu vstupu do prostor pro zástupce nebo zaměstnance zhotovitele a pro uplatnění smluvní pokuty nebo ukončení smluvního vztahu.

III.3.12 Popis vymezení předaného pracoviště a pronajatého prostoru, jednoduchý náčrtek, určení přístupové komunikace k místu plnění předmětu díla bude konkrétně popsána odpovědným zástupcem objednatele (OZ, TDO). Zhotovitel zodpovídá, že jeho zaměstnanci omezí pohyb a působnost na pracovištích objednatele pouze na pracoviště, které jim bylo přiděleno a se kterým byli seznámeni.

III.3.13 Za předání pracoviště a koordinaci prací se zhotovitelem zodpovídá OZ objednatele určená ve smlouvě.

III.3.14 Předané pracoviště bude zhotovitelem řádně ohrazeno a označeno názvem jeho obchodní firmy.

III.3.15 Pokud zhotovitel bude realizovat dílo nebo jeho část prostřednictvím poddodavatele, je odpovědný za činnost poddodavatele, včetně seznámení s těmito Zásadami.

III.3.16 Skladování materiálu a odpadů zhotovitele je povoleno pouze na místech určených objednatelem.

III.4 Pracovní úrazy

III.4.1 Evidence pracovních úrazů se řídí obecně závaznými právními předpisy, zhotovitel je v tomto smyslu současně zaměstnavatelem.

III.4.2 Zhotovitel uvědomí odpovědného zástupce objednatele (OZ) a útvar bezpečnosti a životního prostředí o vzniku a podrobnostech každého pracovního úrazu a to okamžitě nejrychlejší možnou cestou. Objednatel, na jehož pracovišti k pracovnímu úrazu došlo, je následně povinen:

- objasnit příčiny a okolností vzniku pracovního úrazu,
- umožnit zhotoviteli účast na objasnění příčin a okolností vzniku pracovního úrazu a seznámit ho s výsledky tohoto objasnění,
- o každém takovém pracovním úrazu provést Zápis o úrazu a záznam do První evidence pracovních úrazů (interní dokumenty objednatele) pro zhotovitele.

III.4.3 Pokud dojde u úrazem postiženého zaměstnance zhotovitele k pracovní neschopnosti delší než tři kalendářní dny, Záznam o úrazu sepisuje a odesílá stanoveným orgánům a institucím zhotovitel.

III.4.4 Dojde-li na pracovišti objednatele ke smrtelnému úrazu zaměstnance zhotovitele, plní ohlašovací povinnost z platné legislativy zhotovitel. Zhotovitel je současně povinen o události informovat odpovědného zástupce objednatele a útvar bezpečnosti životního prostředí objednatele bez zbytečného odkladu (nejpozději však 8 hodin po vzniku úrazu).

III.4.5 Při vzniku úrazu nebo jiného poškození zdraví jsou zaměstnanci zhotovitele povinni zajistit postiženému první pomoc. Drobné poranění je možno ošetřit na pracovištích objednatele pomocí nástěnných lékárníček, v dopoledních hodinách v ordinaci smluvního lékaře (areál Komořany). Při vzniku závažného poranění je nutné volat JHZSP objednatele (areál Komořany) a rychlou záchrannou službu.

III.5 Oblast součinnosti při zajišťování bezpečnosti práce na technických zařízeních

III.5.1 Zhotovitel je povinen dodržovat zákaz jakékoliv manipulace na strojním, elektrickém, plynovém, tlakovém nebo tepelném zařízení bez příslušného oprávnění a vědomí správce zařízení nebo OZ. Zhotovitel je povinen informovat **směnového inženýra** (dispečera) objednatele o zahájení a ukončení práce na zařízení a v prostorech, které jsou provozovány a nejsou předány zhotoviteli, jako trvale zajištěné pracoviště.

III.5.2 Zhotovitel je povinen koordinovat s příslušným správcem zařízení objednatele, směnovým technikem nebo směnovým inženýrem, dispečerem na jehož zařízení provádí pracovní činnost a zařízení je částečně nebo trvale provozováno nebo se nachází v bezprostřední blízkosti provozovaného zařízení a mohlo by ohrozit zaměstnance zhotovitele způsob a čas zajištění a odstavení zařízení (dle konkrétního pracoviště).

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III.5.3 Bezpečnostní opatření objednatele nesmí zhotovitel měnit nebo odstraňovat.

III.5.4 Veškerá montážní pracoviště a staveniště v areálech objednatele, kam mají přístup i jiní zaměstnanci, než zaměstnanci zhotovitele, musí být řádně oplocena nebo ohrazena, případně jinak zabezpečena a označena dle platných předpisů. Zhotovitel je povinen zabezpečit pracoviště a práce takovým způsobem, aby nedocházelo k ohrožování ostatních zaměstnanců.

III.5.5 Zaměstnanci zhotovitele jsou při práci povinni používat ochranné zařízení strojů a technologických celků zabraňujících nebo snižujících nebezpečí vzniku úrazu, příp. zabraňujících zhoršování hygienických parametrů pracovního prostředí (hluk, prašnost apod.), nesmí je odstraňovat a vyřazovat z činnosti. Dále jsou zaměstnanci povinni neuvádět do provozu a neprovozovat stroje a zařízení bez správně nasazených a seřízených ochranných krytů a zařízení.

III.5.6 Práce na technologických a elektrických zařízeních musí být prováděny až po nezbytném zajištění zařízení. Zařízení zajistí objednatel na základě požadavku zhotovitele. Potřebnou koordinaci včetně seznámení s příslušnou technickou dokumentací zajistí OZ.

Práce v nebezpečných prostorech, nádržích, uzavřených nádobách a zásobnících musí být zabezpečeny v souladu s předpisy BOZP. Způsob zajištění pracovišť, signalizaci a předávání informací upřesní a koordinuje OZ.

III.5.7 Při práci ve výškách je zhotovitel povinen chránit své zaměstnance i třetí osoby individuálním nebo kolektivním zajištěním proti pádu. Stavba a práce na pomocných ochranných a záchranných konstrukcích (lešení, záchranné lešení, ochranné zábradlí, ochranné hrazení) musí být prováděny v souladu s platnými předpisy. Tyto ochranné a záchranné konstrukce musí být před zahájením prací označeny, že byly řádně převzaty do užívání.

III.6 Zásady zajišťování a odjišťování zařízení

III.6.1 Zajišťování zařízení požaduje správce nebo směnový inženýr a odjišťování požaduje vedoucí práce. Stanovení rozsahů a realizaci zajištění a odjištění provádí pověření zaměstnanci Provozu objednatele.

III.6.2 Zajišťování a odjišťování pracoviště (zařízení) provádí pouze zaměstnanci útvaru Provoz objednatele na příkaz směnového technika, technologa nebo směnového inženýra.

III.6.3 U zařízení centrálního zásobování teplem je vždy nutné vypsát příkaz "BS" (strojní) v rozsahu platných předpisů.

III.6.4 U zařízení VN (vysokého napětí) nebo VVN (velmi vysokého napětí) je vždy nutné vypsát příkaz "B" elektro v rozsahu platných předpisů.

III.6.5 Potvrzení zhotoviteli (poddodavateli) o zajištění nebo odjištění pracoviště (zařízení) potvrdí svým podpisem oprávněný provozní zaměstnanec objednatele ve stavebním nebo montážním deníku nebo na B-příkazu.

III.6.6 Pracovní příkaz na opravu zařízení je žádostí o zajištění pracoviště pro zhotovitele, který byl opravou pověřen.

III.6.7 Jakmile během prací vznikne podezření, že zajištění není zcela v pořádku, je nutno okamžitě práce přerušit a zajištění nechat zkontrolovat zaměstnanci útvaru Provoz objednatele.

III.6.8 Zhotovitel před zahájením prací na elektrickém zařízení předloží objednateli osvědčení o absolvování zkoušky z vyhlášky ČÚBP č. 50/1978 Sb., podle příslušného paragrafu u všech svých zaměstnanců, kteří se zúčastní prací.

III.6.9 Před zahájením jakýchkoliv zemních prací je zhotovitel povinen si u správce elektrosystémů (případně u správců jiných systémů infrastruktury) ověřit, zda v daném místě nejsou podzemní elektrická zařízení (ev. jiné rozvody nebo sítě). Pro tyto účely zhotovitel prokazatelně požádá správce zařízení o zajištění vytýčení podzemních zařízení v místě zemních prací. Při pracích je pak povinen postupovat opatrně, aby nedošlo k poškození zařízení, která provozovatel systému na místě vytýčil.

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III.6.10 V souladu s pravidly pro zajišťování revizí elektrických zařízení objednatele je zhotovitel povinen předat vedoucímu správy elektrosystémů kompletní projektovou a průvodní technickou dokumentaci díla, zahrnující mimo jiné i tři kopie výchozí revizní zprávy.

III.7 Hygiena práce

III.7.1 Při vstupním školení bude zhotovitel seznámen s rizikovými pracovišti u objednatele, ochranou proti rizikům a na požádání zhotovitele předloží výsledky měření hygienických parametrů pracovního prostředí.

III.7.2 Zhotovitel nesmí při realizaci prací a ostatních činnostech objednatele používat nebezpečné a zdraví škodlivé látky, jejichž použitím by mohlo dojít k ohrožení zaměstnanců nacházejících se v přilehlých prostorech objednatele.

III.7.3 Při použití přístrojů s rentgenovým, laserovým nebo jiným ionizujícím zářením a zdroji elektromagnetického záření je zhotovitel povinen provést potřebná bezpečnostní opatření a provádění prací s dostatečným předstihem ohlásit OZ. V době používání přístrojů s ionizujícím zářením zhotovitel uvede jméno svého zaměstnance pověřeného dozorem nad ochranou proti ionizujícímu záření a předloží program zabezpečování jakosti pro nakládání se zdroji ionizujícího záření.

III.7.4 Zhotovitelé jsou povinni na své náklady vybavit příslušnými OOPP své zaměstnance, zajistit jejich trvalé používání na pracovištích objednatele a zajistit jejich vnější čistotu.

III.8 Ostatní požadavky

III.8.1 Práce na přístupových a veřejných komunikacích mohou být prováděny zhotovitelem pouze na základě povolení pro práci na veřejné komunikaci. Zhotovitel zajistí osvětlení překážek v komunikaci, zajistí umístění upozornění pro chodce, případně dopravních značek. Rovněž zajistí bezpečný přechod pro chodce popřípadě bezpečné ohrazení pracoviště po celé jeho délce až do doby dokončení těchto prací, a zpětné uvedení místa do bezpečného stavu.

III.8.2 Skladování nebezpečných látek, hořlavin, nádob (tlakových lahví) na stlačené plyny apod. musí být zabezpečeno v souladu s příslušnými právními a ostatními předpisy BOZP a ohlášeno na JHZSP objednatele (areál Komořany).

III.8.3 Provoz vyhrazených tlakových, plynových, elektrických a zdvihacích zařízení musí být zabezpečen v souladu s příslušnými předpisy BOZP. Zvláště musí být zabezpečeno provádění předepsaných kontrol, prohlídek, zkoušek a revizí těchto zařízení. Tyto dokumenty musí být dostupné na předaném pracovišti k případné kontrole.

Článek IV.

ZÁSADY POŽÁRNÍ OCHRANY PRO ČINNOSTI ZHOTOVITELE

IV.1 Povinnosti právnických osob a podnikajících fyzických osob

IV.1.1 Povinnosti právnických osob a podnikajících fyzických osob jsou v oblasti požární ochrany stanoveny zákonem o požární ochraně a jeho prováděcími předpisy, souvisejícími předpisy a příslušnými technickými normami.

IV.1.2 Na převzatých pracovištích nebo v předaných nájemních prostorech zajišťuje zhotovitel požární ochranu samostatně ve smyslu platných, obecně závazných předpisů a je zodpovědný za dodržování ustanovení těchto předpisů a za škody, které vzniknou jeho provozní činností. Převzatá pracoviště a pronajaté prostory jsou předanými pracovišti zhotovitele po celou dobu plnění předmětu díla až do zpětného převzetí objednatelem.

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IV.2 Zajištění podmínek požární bezpečnosti

IV.2.1 Zaměstnanci zhotovitele, resp. poddodavatele, a osoby, zdržující se s vědomím zhotovitele na jeho převzatých pracovištích, objektech nebo vykonávající pracovní činnosti, jsou povinni znát a dodržovat požárně bezpečnostní předpisy objednatele, zejména požární poplachové směrnice; pro daná pracoviště požární řady pracoviště, místní pracovní a provozní předpisy, požární evakuační plány, pracoviště a místa, kde se provozují činnosti se zvýšeným nebo vysokým nebezpečím požáru, a mít v případě, že vykonávají činnosti se zvýšeným nebo vysokým požárním nebezpečím k dispozici požárně technické charakteristiky jím používaných, vyráběných, zpracovávaných, přepravovaných a skladovaných látek a materiálů.

IV.2.2 Z hlediska zajištění požární ochrany v areálech objednatele je zhotovitel povinen:

- Předložit a nechat si schválit typové postupy svařování (externí svářecí inspektor objednatele).
- Dodržovat zákaz kouření v areálech (ve všech vnějších, vnitřních i pronajatých provozních a technologických prostorech) objednatele.
- Manipulace s požárně nebezpečnými nebo výbušnými látkami a materiály, které mohou přispět ke zvýšenému nebezpečí vzniku požáru nebo výbuchu, je třeba tuto skutečnost před započítím pracovní činnosti konzultovat s technikem požární ochrany PO a JHZSP (areál Komořany). Zhotovitelé a jejich poddodavatelé jsou povinni plně dodržovat podmínky požární bezpečnosti při svařování a nahřívání živic v tavných nádobách.
- Pro svařování vyžadující zvláštní bezpečnostní opatření se jejich zajištění prokazuje písemně V-Příkazem k provedení prací na pracovištích se zvýšeným nebo vysokým požárním nebezpečím.
- Zajistit volný přístup k přenosným a pojízdným hasicím přístrojům a požárním hydrantům vnitřním i venkovním, tlačítkům elektrické požární signalizace, elektrickým rozvaděčům a hlavním uzávěrům.
- Řádně označit své pronajaté nebo předané prostory, objekty, pracoviště, sklady, místnosti atd., kde se vykonávají činnosti se zvýšeným nebo vysokým požárním nebezpečím, příkazy, zákazy, pokyny
- Nahlásit druh, množství, počet, umístění a způsob skladovaných hořlavých a výbušných látek a materiálů na úvar bezpečnosti a životního prostředí objednatele. Předat objednateli (úvar bezpečnosti a životního prostředí) požárně technické charakteristiky materiálů tam, kde to povaha smluvní činnosti vyžaduje.
- Bez odkladu ihned nahlásit každý vznik požár podle požárních poplachových směrnic a informovat úvar bezpečnosti a životního prostředí objednatele.
- Předat písemnou žádost o povolení k užívání elektrických tepelných spotřebičů v pronajatých prostorech na úvar bezpečnosti a životního prostředí objednatele.
- Po celou dobu, po kterou má zhotovitel odevzdané a převzaté pracoviště, objekt apod., nebo vykonává pracovní činnost, dbát na to, aby všechny prostředky požární ochrany byly neporušené, funkční a byly udržovány v provozuschopném stavu. V opačném případě má povinnost zjištěné skutečnosti nahlásit na úvar bezpečnosti a životního prostředí, případně na HZSP v areálu Komořany.
- V případě převzatého pracoviště v areálech objednatele se podrobně seznámí:
 - s požárně nebezpečnými místy nebo s činnostmi se zvýšeným nebo vysokým požárním nebezpečím
 - s rozmístěním a obsahem požárních poplachových směrnic
 - s místními ohlašovacími požáru
 - s obsahem požárních řádů pracovišť
 - s obsahem požárních evakuačních plánů
 - s rozmístěním, počtem a použitím PHP, hydrantů požárního vodovodu
 - s pravidly pro používání elektrotepelných spotřebičů a vařičů.
 Seznámení provede správce příslušné technologie nebo zařízení.
- Uhradit všechny náklady objednatele spojené s uvedením požární techniky do pohotovostního stavu, které vzniknou v důsledku nedodržení předpisů PO a dále náklady spojené s případným požárem.
- Zhotovitel je povinen zachovat předepsaný průjezdní profil na komunikacích v areálech objednatele. Případné změny průjezdních profilů v důsledku stavebních nebo jiných prací musí zhotovitel neprodleně předjednat s velitelem JHZSP (areál Komořany) objednatele, vedoucím stavebního oddělení a vedoucím útvaru bezpečnosti a ŽP, kde ohlásí místo změny průjezdního profilu, datum a časové

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omezení.

- n) Pokud práce zasahují do komunikací nebo je narušují, je zhotovitel povinen předem písemně dohodnout podmínky postupu práce a bezpečnostní opatření v součinnosti s technickým dozorem, vedoucím stavebního oddělení, vedoucím útvaru bezpečnosti a ŽP a následně komunikaci zabezpečit dle platných předpisů.
- o) Ve všech areálech objednatele je zakázáno jakkoliv manipulovat s otevřeným ohněm (netýká se svařování).

IV.2.3. Únikové cesty a komunikace včetně vymezených prostorů před elektrickými rozvaděči je zhotovitel povinen trvale udržovat volné a nezastavěné. Označení únikových cest nesmí být odstraňováno, poškozováno ani zakrýváno.

IV.2.4 V místech se zvýšeným požárním nebezpečím nezahájí zhotovitel práce před potvrzením pracovního příkazu V od objednatele a dále postupuje dle podmínek v něm uvedených. Pro práci na plynových zařízeních dodržuje zhotovitel podmínky pracovního příkazu P.

IV.2.4 Svařování

IV.2.4.1 Provádění svářečských prací lze pouze v souladu s interním dokumentem objednatele Pravidla řízení a kontroly kvality svařování na základě kvalifikovaných postupů svařování (WPS) a svářeči kvalifikovanými podle platných norem.

IV.2.4.2 Zhotovitel je povinen předložit objednateli postupy svařování WPS a protokoly WPQR nejpozději při předání pracoviště. Uvedená předběžná svarová dokumentace musí být před zahájením realizace, tzn. do zahájení svářečských prací schválena Inspekčním dozorem svařování objednatele.

IV.2.4.3 Zhotovitel zajistí dohled odborně způsobilé osoby, která bude dohlížet na provádění svářečských prací a splňuje kvalifikační požadavky a požadavky jakosti při svařování dle platných norem.

IV.2.4.4 V případě, že zhotovitel bude provádět svářečské práce, předloží před jejich zahájením zodpovědnému zaměstnanci ve věcech technických na straně objednatele ke kontrole doklady odborné způsobilosti svářečů (svářečské průkazy, včetně kopií certifikátů oprávnění) k evidenci v Registru svařování.

Článek V.

OCHRANA ŽIVOTNÍHO PROSTŘEDÍ

V.1 Obecná ustanovení – povinnosti zhotovitele

V.1.1 Předmět smlouvy provede zhotovitel v souladu s platnými právními předpisy a technickými normami, které se na smluvní činnost vztahují. Jedná se o předpisy v platném znění z oblasti ochrany životního prostředí, jež zahrnují předpisy na ochranu jednotlivých složek ochrany životního prostředí, tvořící nakládání s odpady, vodní hospodářství, ochranu ovzduší, regulované látky a plyny, chemické látky, ochranu přírody aj.

V.1.2 Zhotovitel má v průběhu realizace a dokončování díla výhradní odpovědnost za provedení veškerých odpovídajících úkonů vedoucích k ochraně životního a pracovního prostředí na převzatých montážních pracovištích a plochách i na staveništi takových činností a opatření, jež povedou k zabránění vzniku škod na životním prostředí.

V.1.3 Školení z místních ekologických předpisů pro zodpovědného zástupce zhotovitele zajistí objednatel. Zhotovitel zodpovídá za absolvování školení všech zaměstnanců zhotovitele, kteří se zúčastní na předmětu smlouvy.

V.1.4 Materiály obsahující nebezpečné látky pro životní prostředí, chemické látky a směsi musí být skladovány způsobem, zaručujícím bezpečnost proti neodborné manipulaci, zneužití a úniku do pracovního nebo životního prostředí.

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V.1.5 Ve všech areálech objednatele je zakázáno provádět mytí a údržbu všech motorových vozidel (nákladní, osobní automobily, mechanizační prostředky) zhotovitele.

V.1.6 V případě, že některý zaměstnanec zhotovitele poruší interní předpisy ochrany životního prostředí objednatele nebo i obecně závazné právní předpisy, vedoucí k ohrožení jakosti složek životního prostředí, je zhotovitel povinen zaplatit smluvní pokutu podle interní směrnice objednatele „Sazebník smluvních pokut za porušení bezpečnostních, hygienických, protipožárních a ekologických předpisů“.

V.1.7 V případě vzniku škody způsobené zhotovitelem v období plnění předmětu smlouvy z důvodů porušení předpisů jednotlivých složek životního prostředí (o ochraně vod, ovzduší, přírody a při nakládání s odpady, chemickými látkami) nebo dopravních předpisů v areálech objednatele, nese náklady na odstranění škody zhotovitel. O škodách bude zhotovitel neprodleně informovat objednatele a provede bez zbytečného odkladu opatření k odstranění vzniklé škody.

V.1.8 V případě vzniku ekologické havárie je zhotovitel povinen tuto skutečnost bezodkladně nahlásit směnovému inženýrovi zhotovitele (který následně informuje vedoucí útvaru bezpečnosti a životního prostředí) a vedle odstraňování následků vlastními silami a na vlastní náklady je povinen dbát pokynů objednatele a učinit veškerá opatření, aby zajistil součinnost zaměstnanců zhotovitele při odstranění následků havárie.

V.1.9 Ohlašovací povinnost se vztahuje i na případy bezprostředního ohrožení nebo možného následného ohrožení jakosti některé ze složek životního prostředí (voda, ovzduší, půda, vegetace), kdy je povinen každý zaměstnanec zhotovitele toto neprodleně oznámit směnovému inženýrovi a vedoucímu útvaru bezpečnosti a životního prostředí.

V.1.10 Zhotovitel je povinen splnit podmínky, stanoviska a doporučení dotčených orgánů státní správy na úseku ochrany životního prostředí při plnění předmětu smlouvy a to jak v rámci stavebního řízení, tak i bez něj.

V.1.11 Případný sankční postih (pokuta) orgánů státní správy uplatněný proti objednateli, vzniklý z důvodu porušení zákonů o ochraně životního prostředí zhotovitelem, uhradí zhotovitel objednateli v plné výši.

V.1.12 Objednatel předá zhotoviteli staveniště na základě oběma stranami potvrzeného písemného protokolu (lze nahradit záznamem ve stavebním deníku), ve kterém bude uveden zejména stav staveniště při předání a další náležitosti, jako je vybavení staveniště odpadními nádobami, jejich umístění a režimu nakládání s nimi.

V.1.13 Objednatel určí v rámci vnitřních i vnějších prostor objektů přepravní trasy pro přepravu nebezpečných odpadů a chemických látek. Za přepravu zodpovídá zhotovitel okamžikem jejich nakládky či vykládky nebo vjezdu či výjezdu do areálů objednatele.

V.1.14 Objednatel bude na stavbě vykonávat dozor (kromě pověřeného OZ, TDO) prostřednictvím svého zaměstnance z útvaru bezpečnosti a životního prostředí, který bude v průběhu realizace stavby sledovat, zda jsou podmínky ochrany životního prostředí prováděny dle smluvních ujednání, technických a právních předpisů.

V.2 Ochrana ovzduší

V.2.1 V celém areálu objednatele je zakázáno manipulovat s otevřeným ohněm bez písemného souhlasu objednatele (vyjma činnosti, kde je manipulace s otevřeným ohněm nedílnou součástí technologického postupu, jako např. svařování, dělení materiálů, nahřívání živců apod.). Zejména je zakázáno termickým způsobem odstraňovat odpady.

V.2.2 Ve všech areálech objednatele je zakázáno používání perchloretylenu (včetně přípravků s jeho obsahem) jako zdroje těkavých látek. V případě, že zhotovitel používá ke své činnosti podle smlouvy těkavé organické látky:

- které jsou klasifikovány jako látky karcinogenní, mutagenní a toxické pro reprodukci; - -
- halogenované organické látky;
- těkavé organické látky, benzín.

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potom je povinen dodržovat zákon o ovzduší a jeho prováděcí předpisy vztahující se k používání těkavých organických látek (především emisní limity, oznamovací povinnost, vedení evidence a přehledu o spotřebě těchto látek atd.), zákon o látkách, které poškozují ozonovou vrstvu a limity ochrany zdraví.

V.2.3 Zhotovitel je povinen v předstihu informovat směnového inženýra o všech činnostech, které by mohly mít vliv na kvalitu vypouštěných emisí ze zdrojů (tuhé látky, plynné emise) - výpadky elektrické energie, nefunkčnost odlučovacího zařízení nebo technologie odpopílkování atp. nebo by mohly ovlivnit provoz jednorázového nebo kontinuálního měření emisí. V případě, že daná provozní činnost zhotovitele není v souladu s Provozním řádem zdroje nebo provozními předpisy pro provoz kotlů je povinen toto projednat v dostatečném předstihu s odpovědným zástupcem objednatele

V.2.4 V případě ohrožení kvality vypouštěných emisí do ovzduší bez prodlení informuje směnového inženýra nebo vedoucí útvaru bezpečnosti a životního prostředí.

V.3 Ochrana přírody

V.3.1 Bez souhlasu objednatele se v areálu objednatele nesmí provádět žádná stavební, výkopová, skladová či jiná činnost, která by změnila charakter pozemku.

V.3.2 Kácení dřevin nebo odstranění vegetace bez souhlasu orgánů státní nebo veřejné správy a objednatele je zakázáno.

V.4 Nakládání s odpady

V.4.1 Při realizaci předmětu smlouvy (díla, služby), není-li stanoveno smlouvou jinak, nahlíží se na zhotovitele jako na původce odpadů, které vznikly při provádění jeho činnosti a je tedy povinen plnit povinnosti původce odpadů, ve smyslu zákona o odpadech v platném znění a jeho prováděcích právních předpisů a právních předpisů s ním souvisejících.

V.4.2 Druhotné suroviny, zejména pak kovový odpad a kabely vzniklý z plnění smlouvy zhotovitelem, zůstávají majetkem objednatele. Zhotovitel upraví kovový odpad dle pokynů objednatele a zajistí jeho bezpečnost do doby odvozu do objednatelům stanovené výkupny kovů. Pokud zhotovitel zajišťuje odvoz do výkupny na vlastní náklady, ve stavebním deníku bude proveden záznam o takto odváženém množství, podepsaném objednatelům. Zhotovitel vždy předává objednateli váženky předaných kovů z výkupny a to nejpozději do 3 dnů uplynulého měsíce do útvaru bezpečnosti a životního prostředí, alternativně TDO, pokud není ve smlouvě uvedeno jinak.

V.4.3 Na předaných staveništích je zhotovitel povinen dodržovat povinnost třídění odpadů, zajistit dostatečný počet odpadních nádob a odstranění odpadů po celou dobu realizace díla.

V.4.4 Zařízení pro sběr tuhých a kapalných odpadů (Sklady odpadů) objednatele v areálu teplárny Komořany může využívat za účelem předání odpadů cizích původců objednateli jako osobě způsobilé k odstranění odpadů zhotovitel za úplaty a to i v případě, že režim nakládání s odpady není specifikován smluvními ustanoveními (režim předávání odpadů do příslušného skladu, interní doklady, fakturace, zodpovědnost atp.). za podmínky dodržování Provozního řádu skladu odpadů.

V.4.5 V případě, že zhotovitel nebo nájemce bude odpady vzniklé z jeho činnosti předávat objednateli do skladů odpadů, je povinen řádně vyplnit interní formulář vrácenky, na které bude zřetelně vyznačena obchodní firma zhotovitele nebo nájemce (původce odpadu), předmět díla dle smlouvy, dále pak musí obsahovat přesnou specifikaci odpadu tzn. všechny dostupné náležitosti z chemického složení (uvedeného na štítku materiálu, technických listů apod.) a použité technologie, při které odpad vznikl, k identifikaci odpadu pro jeho správné zařazení podle Katalogu odpadů (např. kabel – měděný, hliníkový; olej - motorový, převodový, směs olejů s vodou; kovový odpad – nerez, U profil, lešenářské trubky; plech – pozink, Al plech včetně síly stěny; barevné kovy – bronzové trubičky, mosaz), hmotnost odpadu – odhad váhy, počet kusů, rozměr; čitelné jméno a podpis ze smlouvy k tomu oprávněné osoby zhotovitele. Za účelem zřejmé identifikace pro fakturaci objednatelům musí být vrácenka odsouhlasená ze smlouvy k tomu oprávněnou osobou zhotovitele, včetně otisku razítka.

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V.4.6 Charakteristika popisu technologie a činnosti musí být jednoznačná pro určení nebezpečných vlastností odpadů a jejich následného odstranění, případně vzorkování odpadů. Bez těchto údajů nebude odpad do skladu odpadů od zhotovitele přijat.

V.4.7 Do ceny odstranění bude zahrnut i finanční náklad za chemický rozbor odpadu, pokud je původce odpadu nepředloží bez vyzvání odpadovému hospodáři objednatele do 10 dnů od převzetí odpadu do skladu odpadů.

V.4.8 Předávaný odpad do zařízení objednatele musí být předán roztříděný dle specifikace na vrácence (izolační vata, dřevo, suť, plastový obal, komunální odpad, apod.).

V.4.9 Vrácenka se vyplňuje ve dvou vyhotoveních. Originál vrácenky zůstává na skladě odpadů jako doklad prvotní evidence objednatele o příjmu odpadů a kopie vrácenky zůstává zhotoviteli jako doklad o odstranění odpadů. Tuhý odpad (dřevo, kovy, apod.) a tekutý odpad (barvy, olej, apod.) se píše vždy na samostatnou vrácenku zvlášť.

V.4.10 V případě, že zhotovitel nebo nájemce požaduje přistavení (zapůjčení) odpadních nádob – kovových van (dále jen odpadní nádoby“) ze skladu odpadů, platí následující postup:

- Zmocněnec objednatele zapíše do deníku zapůjčení odpadních nádob s důrazným uvedením zodpovědnosti zhotovitele nebo nájemce za odpadní nádoby, včetně jejich obsahu.
- Zhotovitel nebo nájemce za odpadní nádoby ručí až do doby vrácení zpět na sklad odpadů, kam bude přijata buď prázdná (zhotovitel si zabezpečí odstranění odpadů na vlastní náklady) nebo s vytríděným odpadem a řádně vyplněnou vrácenkou
- Odpadní nádoby určené k půjčování budou obsluhou skladu odpadů označeny popisem. Záznam o zapůjčení a vrácení nebo přistavení a odvozu odpadních nádob bude zapsán do provozního deníku skladu odpadů a do deníku zhotovitele. Na základě těchto zápisů bude provedena fakturace objednatelem.
- Za manipulaci s nádobami na odevzdávaný odpad objednatelem a za pronájem těchto nádob bude zhotoviteli účtována sjednaná cena.

V.4.11 Všechny další požadavky při nakládání s odpady v areálech objednatele jsou uvedeny ve smlouvě.

V.5 Nakládání s chemickými látkami a směsmi

V.5.1 Zhotovitelé mají odpovědnost za nakládání s chemickými látkami a chemickými směsmi v souladu s příslušnými právními předpisy, tak, aby nebylo ohroženo zdraví zaměstnanců všech zaměstnavatelů i dalších osob, vyskytujících se na pracovišti, životní prostředí a majetek, a za dodržování právních předpisů o mezinárodní přepravě nebezpečných věcí. ZO objednatele dohlíží na plnění následujících povinností zhotovitelů:

V.5.2 Před započítím prací zhotovitelé předkládají autorizované osobě seznam používaných chemických látek a chemických směsí, údaje o jejich klasifikaci (bezpečnostní list) a množství, místě uložení a způsobu zabezpečení proti odcizení, poškození obalu a úniku materiálu do životního prostředí v areálu objednatele, nejpozději v den zahájení prací v areálu objednatele

V.5.3 Zhotovitelé nesou odpovědnost za správné nakládání s chemickými látkami a chemickými směsmi, které budou používat.

V.5.4 Zhotovitelé po ukončení prací zajišťují odvoz a odstranění nespotřebovaných chemických látek a chemických směsí a prázdných obalů, o ukončení všech těchto prací uvědomí útvar bezpečnosti a životního prostředí.

V.5.5 Zodpovědnost zhotovitelů při nakládání s chemickými látkami a směsmi je součástí smluvního vztahu mezi objednatelem a zhotovitelem.

V.6 Ochrana jakosti podzemních a povrchových vod

V.6.1 Zaměstnanci zhotovitele zabezpečující smluvní činnosti mají rovněž odpovědnost za dodržování zákona o vodách a jeho prováděcích předpisů, a dalších souvisejících relevantních právních a technických předpisů. OZ objednatele dohlíží na plnění následujících povinností externích firem:

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V.6.2 Mytí dopravní techniky, tj. osobních, nákladních aut a těžkých mechanizačních a dopravních prostředků v areálu objednatele je zakázáno.

V.6.3 Splachování kalů do kanalizace, čištění komunikací a manipulačních ploch splachováním, vypouštění nebo vylévání závadných (rovných nebo chemických látek), které by mohly ohrozit jakost vypouštěných odpadních vod nebo způsobit havárii, je zakázáno.

V.6.4 Pracovníci externích firem jsou povinni zabezpečit svou dopravní techniku tak, aby nemohlo dojít k úniku provozních kapalin nebo pohonných hmot a znečištění komunikací nebo odstavných ploch.

V.6.5 Pokud činnost zhotovitele vyžaduje i vypouštění odpadních vod (např. proplachy, vyvážky) je zhotovitel povinen předem písemně předložit složení vypouštěných odpadních vod a jejich předpokládané množství útvaru bezpečnosti a životního prostředí.

V.6.6 Do kanalizace nesmí být vypouštěny nebo jinak přepravovány následující látky a škodliviny (platí pro všechny uživatele kanalizace):

- radioaktivní, chemické, infekční a jiné látky ohrožující zdraví a bezpečnost nebo látky způsobující nadměrný zápach;
- látky narušující materiál stokové sítě popř. čistírny odpadních vod;
- látky způsobující provozní závady nebo poruchy v průtoku stokové sítě;
- látky hořlavé, výbušné, popř. látky, které smísením se vzduchem nebo vodou tvoří výbušné, dusivé nebo otravné směsi;
- látky jinak nevázané, které ale smísením s jinými látkami, jež se mohou v kanalizaci vyskytnout, tvoří látky jedovatého charakteru;
- pesticidy, jedy, omamné látky, žíraviny a ropné látky;
- vypouštěna voda teplejší než 40 °C.

V.6.7 Dále je zhotovitel povinen okamžitě po zjištění havárie nahlásit objednateli, že došlo k havárii, uvést své jméno, přesné místo havárie a čas, kdy k havárii došlo, specifikovat uniklou látku a oznámit provedená opatření případně způsob likvidace havárie. O způsobu hlášení je zhotovitel informován při vstupním bezpečnostním školení.

Článek VI.

POŘÁDEK NA PRACOVISTI, SOUČINNOST A SMLUVNÍ POKUTY

VI.1 Pořádek na pracovišti

VI.1.1 Zhotovitel zodpovídá za udržování pořádku v (na) objektech a jejich okolí. Objektem se rozumí pracoviště a plochy, prostory, místnosti nebo budovy určené smlouvou. Hranice okolí objektu se nachází v polovině vzdálenosti k jiným objektům nebo je tvořena oplocením areálu objednatele nebo kopíruje vnější stranu půdorysu objektu ve vzdálenosti max. 20 m. Zhotovitel se zavazuje využívat mimo pracoviště jen objekty určené smlouvou. V případě nedodržení pořádku, BOZP, PO a nakládání s odpady se zhotovitel vystavuje smluvní pokutě.

VI.1.2 Objednatel předá zhotoviteli pracoviště (resp. jiný objekt) bezplatně k užívání po dobu provádění díla. Zhotovitel má povinnost zřetelně označit jím užívané objekty eventuálně předané plochy a užívat je výlučně jen k určenému účelu.

VI.1.3 Zhotovitel bude objekty udržovat volné od všech překážek, které nejsou nezbytné, a bez zbytečného odkladu uskladní nebo odstraní jakékoliv nadbytečné materiály, montážní zařízení, které nebude dále požadováno nebo nebude potřebné při provádění prací na díle. Zhotovitel bez zbytečného odkladu odstraní odpad, nacházející se v (na) jím pronajatých prostorech.

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VI.1.4 Zhotovitel zajistí okamžitý úklid příjezdových komunikací, jestliže došlo k jejich znečištění nebo omezení průjezdu v důsledku jeho činností u objednatele. Přístupové komunikace musí být volné pro průjezd požárních a záchranných vozidel.

VI.1.5 Pořádkem se rozumí aktuální stav pozemku, objektu, provozní technologie apod., který není v rozporu s předpisy BOZP, PO, ochrany životního prostředí a vnitřními předpisy objednatele. Patří sem zejména soustavné udržování čistoty komunikací, cest, chodníků apod. a zajištění jejich průchodnosti, přehledné ukládání materiálu a ostatních předmětů. Pořádek zahrnuje rovněž třídění odpadů podle druhů a jejich shromažďování k tomu určených a příslušně označených nádob, se zvláštním zřetelem na odpady nebezpečné a jejich odstraňování, preventivní opatření proti vzniku ekologických havárií a postup při jejich výskytu. Dále sem patří pravidelné odstraňování nánosů prachu, bláta, zejména okamžitá likvidace následků nehod.

VI.1.6 Pozemky využívané jako montážní, skladovací a manipulační plochy budou řádně označené tabulkou s názvem uživatele a jménem odpovědné osoby zhotovitele. Stejným způsobem budou označeny ostatní objekty (garáže, přístřešky, apod.). Tabulku velikosti 21x15 cm, s názvem uživatele, jménem odpovědné osoby a telefonním číslem zajistí uživatel. Odpovědné osoby zhotovitele jsou povinny zajistit úklid pozemků nejméně 1x za měsíc.

VI.1.7 V prostorech provozních technologií, resp. ve vnitřních prostorech provozních budov, je za udržování pořádku zodpovědný obslužný personál.

VI.1.8 Ostatní plochy, komunikace a chodníky, které jsou v areálu závodu a slouží výhradně pro potřeby nájemců, si tito nájemci udržují sami a na vlastní náklady.

VI.1.9 Zhotovitel je povinen umožnit přístup na předaná pracoviště nebo do svěřených prostorů zaměstnancům objednatele pověřeným kontrolou na jejich vyzvání.

VI.1.10 Po provedení díla a před uplynutím nájemní smlouvy je povinností zhotovitele předat pracoviště (resp. jiné objekty) objednateli v uklizeném a bezpečném stavu, prosté všech přebytečných materiálů, montážních zařízení, odpadů, apod. V opačném případě je objednatel oprávněn požadovat náhradu přiměřených nákladů na odstranění zjištěných závad na zhotoviteli a to i po uplynutí platnosti Kontraktu nebo Smlouvy o nájmu.

VI.2 Zásady součinnosti mezi zhotovitelem a objednatelem

VI.2.1 Zhotovitel upozorní objednatele na všechny okolnosti, které by mohly vést k ohrožení provozu nebo k ohrožení bezpečného stavu technických zařízení a objektů objednatele.

VI.2.2 Zhotovitel je povinen upozornit objednatele, že použije třetí osoby (subdodavatel-poddodavatel), na které práce a v jakém počtu.

VI.2.3 Zhotovitel bude při své činnosti respektovat ochranná pásma inženýrských sítí uložených pod zemí a nad zemí, jejichž vytyčení zajistí na svůj náklad, pokud není ve smluvním ujednání stanoveno jinak.

VI.2.4 Pokud zhotovitel bude používat stroj nebo zařízení na nepřevzatém pracovišti, před zahájením prací upozorní OZ na nebezpečí vyvolaná umístěním tohoto stroje nebo zařízení, aby mohl včas uskutečnit potřebná bezpečnostní opatření.

VI.2.5 Pokud při stavební nebo montážní činnosti bude zhotovitel případně třetí osoba používat majetek objednatele (jeřáby, výtahy, elektrické rozvody a ostatní), musí být předem uzavřena písemná dohoda. Obsahem dohody bude vymezení práv a povinností, jakož i stanovení podmínek bezpečného používání daného majetku objednatele.

VI.2.6 Drobná ukládání materiálů může zhotovitel příp. třetí osoba, provádět jen v prostorech, které k tomu byly určeny objednatelem. Pokud zhotovitel zpozoruje nebezpečí, které by mohlo ohrozit zdraví nebo životy osob nebo způsobit provozní nehodu nebo poruchu technických zařízení, případně příznaky takového nebezpečí, je povinen ihned přerušit práci, oznámit to neprodleně OZ a podle možnosti upozornit všechny osoby, které by mohly být tímto nebezpečím ohroženy.

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VI.2.7 V případě ohrožení výroby, ohrožení zdraví a života zaměstnanců, vzniku havarijního stavu je zhotovitel povinen přerušit práci a uposlechnout příkazu směnového inženýra, směnového technika, správce zařízení objednatele, technologa a vedoucí útvaru bezpečnosti a životního prostředí.

VI.2.8 Po ukončení díla je zhotovitel povinen vyklidit pracoviště a uvést je do náležitého stavu pro jednání o předání a převzetí díla.

VI.2.9 O porušení ustanovení zásad informuje objednavatel zhotovitele písemně. Zhotovitel je povinen realizovat ve stanovených termínech nápravná opatření z provedených kontrol.

VI.3 Smluvní pokuty

VI.3.1 Zhotovitel je srozuměn s tím, že za porušení některého z ustanovení uvedených v Pravidlech, ke kterým dojde přímým jednáním nebo opomenutím z nedbalosti jeho zaměstnanců či zástupců, případně třetí osoby, jsou pověřeni zaměstnanci objednatele kontrolou oprávnění vyúčtovat smluvní pokutu dle Sazebníku pokut uvedeného v **příloze č. 4**.

Podmínky vyúčtování smluvní pokuty jsou specifikovány smluvním vztahem.

VI.3.2 Klasifikace závažnosti porušení stanovených podmínek náleží výlučně do kompetence zaměstnancům objednatele, pověřených kontrolou činností zhotovitele.

V příloze č. 4 této směrnice jsou specifikovány smluvní pokuty za jednotlivá porušení povinností zhotovitele.

VI.3.3 Smluvní pokutou není dotčena povinnost zhotovitele uhradit pokutu na základě správního řízení vedeným příslušnou státní institucí vykonávající státní odborný dozor.

Článek VII. ZÁVĚREČNÁ USTANOVENÍ

VII.1 Objednatel si vyhrazuje právo kontroly plnění těchto Pravidel a jejich upravování v souvislosti se změnou právních a ostatních předpisů závazných pro objednatele. Zhotovitel se zavazuje, že bude respektovat všechna pozměňující ustanovení, vyvolaná uvedenou změnou, a tuto skutečnost odsouhlasí podpisem protokolu o převzetí nově vydaných Pravidel.

VII.2 Veškeré v Pravidlech uvedené právní předpisy a vnitřní předpisy objednatele se rozumí ve znění platném v době realizace činností podle smlouvy.

VII.3 Směrnice obsahuje čtyři přílohy:

- Stručných přehled dotčených právních předpisů
- Stručný přehled dotčených vnitřních předpisů objednatele
- Situační plán United Energy, a.s. – příjezdové cesty pro hasiče
- Směrnice Smluvní pokuty za porušení bezpečnostních, hygienických, požárních a ekologických předpisů – Sazebník pokut

Ing. Milan Boháček
generální ředitel

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Příloha č. 1 ke směrnici SM-UE-1805 - Stručných přehled dotčených právních předpisů

<i>Bezpečnost práce</i>
Zákon č. 262/2006 Sb., zákoník práce, ve znění pozdějších a prováděcích předpisů
Zákon č. 309/2006 Sb., kterým se upravují další požadavky bezpečnosti a ochrany zdraví při práci v pracovněprávních vztazích a o zajištění bezpečnosti a ochrany zdraví při činnosti nebo poskytování služeb mimo pracovněprávní vztahy, ve znění pozdějších a prováděcích předpisů
Zákon č.258/2000 Sb., o ochraně veřejného zdraví
Nařízení č. 591/2006 Sb., o bližších minimálních požadavcích na bezpečnost a ochranu zdraví při práci na staveništích, ve znění pozdějších změn
Nařízení č. 406/2004 Sb., o bližších požadavcích na zajištění bezpečnosti a ochrany zdraví při práci v prostředí s nebezpečím výbuchu, ve znění pozdějších změn
Nařízení č. 101/2005 Sb., o podrobnějších požadavcích na pracoviště a pracovní prostředí, ve znění pozdějších změn
Nařízení č. 201/2010 Sb., o způsobu evidence úrazů, hlášení a zasílání záznamu o úrazu, ve znění pozdějších změn
Nařízení č. 378/2001 Sb., kterým se stanoví bližší požadavky na bezpečný provoz a používání strojů, technických zařízení, přístrojů a nářadí, ve znění pozdějších změn
Vyhláška č. 394/2006 Sb., kterou se stanoví práce s ojedinělou a krátkodobou expozicí azbestu a postup při určení ojedinělé a krátkodobé expozice těchto prací
<i>Požární ochrana</i>
Zákon č. 133/1985 Sb., o požární ochraně, ve znění pozdějších a prováděcích předpisů
Vyhláška č. 246/2001 Sb., o požární prevenci, ve znění pozdějších změn
Vyhláška č. 87/2000 Sb., kterou se stanoví podmínky požární bezpečnosti při svařování a nahřívání živců v tavných nádobách, ve znění pozdějších změn
<i>Ochrana životního prostředí</i>
Zákon č. 350/2011 Sb., o chemických látkách a chemických směsích a o změně některých zákonů (chemický zákon), ve znění pozdějších a prováděcích předpisů
Zákon č. 185/2001 Sb., o odpadech a o změně některých dalších zákonů, ve znění pozdějších a prováděcích předpisů
Zákon č. 254/2001 Sb., o vodách a o změně některých zákonů (vodní zákon), ve znění pozdějších a prováděcích předpisů
Zákon č. 201/2012, o ochraně ovzduší a o změně některých dalších zákonů (zákon o ochraně ovzduší), ve znění pozdějších a prováděcích předpisů
Zákon č. 17/1992 Sb., o životním prostředí, ve znění pozdějších a prováděcích předpisů
Zákon č. 114/1992 Sb., o ochraně přírody a krajiny, ve znění pozdějších a prováděcích předpisů
Zákon č. 477/2001 Sb., o obalech a o změně některých zákonů (zákon o obalech), ve znění pozdějších a prováděcích předpisů
<i>Ostatní</i>
Zákon č. 22/1997 Sb., o technických požadavcích na výrobky a o změně a doplnění některých zákonů, ve znění pozdějších a prováděcích předpisů
Technické normy (ČSN, ČSN EN, ČSN ISO, ČSN EN ISO, event. platné oborové normy atd.)

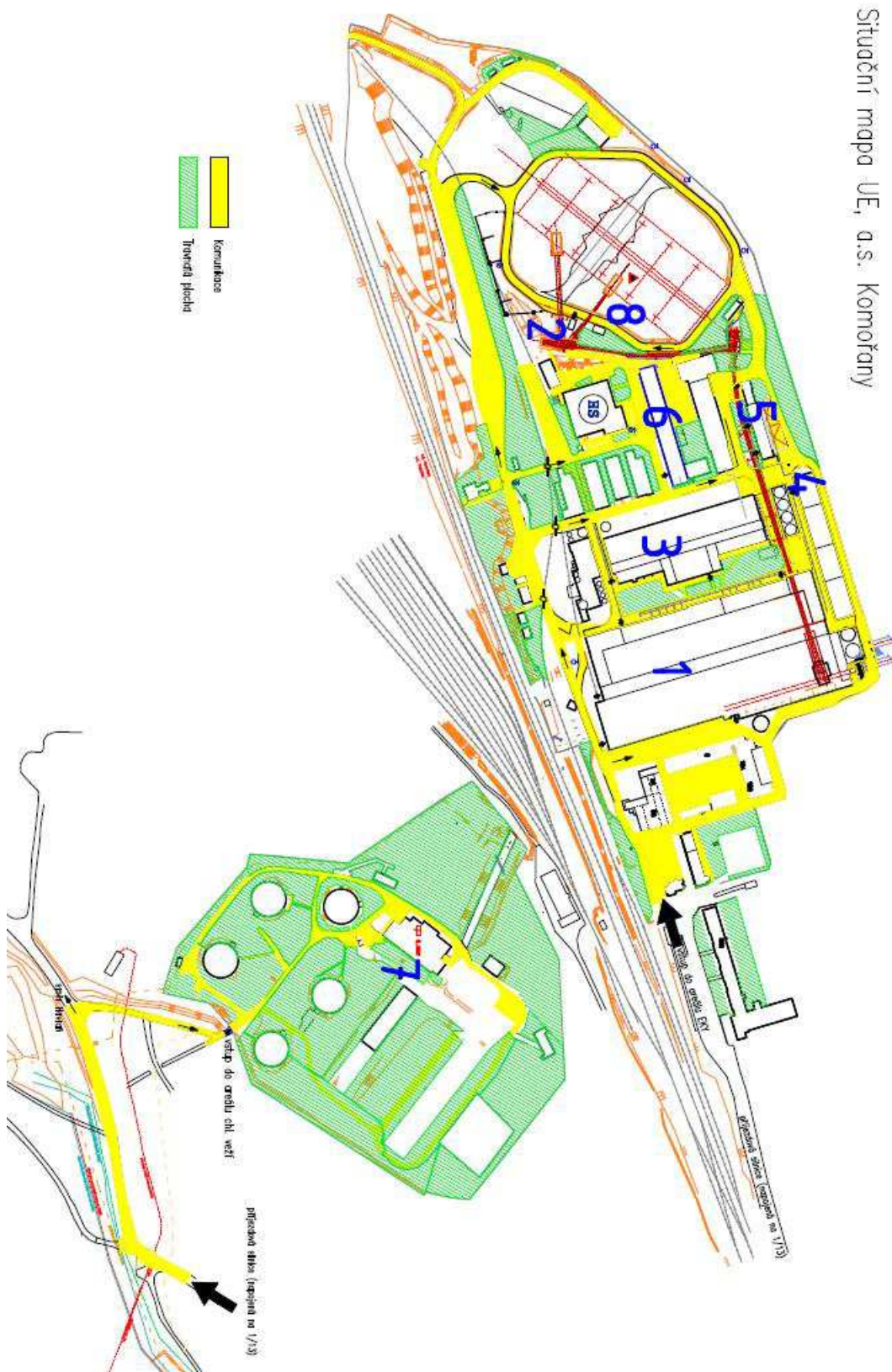
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Příloha č. 2 ke směrnici - **Stručný přehled dotčených vnitřních předpisů objednatele**

- Směrnice Smluvní pokuty za porušení bezpečnostních, hygienických, protipožárních a ekologických předpisů
- Směrnice Zásady ochrany objektů a majetku společnosti
- Směrnice ST Podmínky a pravidla pro uložení cizího zařízení do prostor v majetku ST, a.s.
- Rozhodnutí Vjezdy vozidel do areálů United Energy, a.s.
- Rozhodnutí Šetření pracovních úrazů
- Rozhodnutí Zákaz kouření v objektech a v areálech společnosti
- Příkaz Ochrana zdraví před alkoholismem a jinými návykovými látkami
- Směrnice Rizika možného ohrožení života a zdraví zaměstnanců při práci, Katalog rizik
- Příkaz Povinné nošení ochranných přileb
- Příkaz Povinné nošení ochranného oděvu s vysokou viditelností
- Příkaz Ohlašování závažných incidentů
- Rozhodnutí Projekt ochrany osobních údajů (technicko-organizační opatření k zajištění ochrany osobních údajů ve společnostech)
- Směrnice Ochrana osobních údajů GDPR
- Směrnice Zabezpečení požární ochrany
- Rozhodnutí Zabezpečení pracovišť při činnostech se zvýšeným nebezpečím požáru a výbuchu
- Směrnice Nakládání s odpady, obaly a vratnými výrobky
- Směrnice O nakládání s vodami
- Směrnice Nakládání s nebezpečnými chemickými látkami a chemickými přípravky
- Příkaz Strojní příkaz bezpečnosti práce – strojní BS příkaz
- Směrnice Opravy vyhrazených tlakových zařízení a tlakového potrubí, metodika zkoušek a vedení dokumentace
- Příkaz „B“ elektro
- Směrnice Pravidla technické správy, provozu a údržby majetku
- Směrnice Pravidla řízení a kontroly kvality svařování
- Místní provozní bezpečnostní předpis č. Z013 Havarijní plán – Plán opatření pro případy havarijního zhoršení jakosti vod závadnými a nebezpečnými látkami
- Místní provozní předpis č. O001 Provozní řád skladu odpadů - Zařízení pro sběr tuhých a kapalných odpadů
- Místní provozní předpis č. O003 Kanalizační řád – Kanalizace United Energy, a.s. v lokalitě Most-Komořany
- ZPI 012 Provozní instrukce - Vlečkový řád (Pokyny vlastníka dráhy /vlečky/ k zajištění bezpečnosti osob nacházejících se v obvodu vlečky, bezpečnosti provozování dráhy a drážní dopravy a ochrany majetku)

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Příloha č. 3 ke směrnici SM-UE-1805 Příjezdové cesty - hasiči



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Příloha č. 4 ke směrnici SM-UE-1805 Pravidla chování zhotovitelů

United Energy, a.s. Teplárenská 2 434 03 Most - Komořany	Směrnice č. SM-UE-1802	Vydáno dne: 4. června 2018
Zpracovatel: Ing. Paterová Daniela (Vedoucí útvaru bezpečnosti a životního prostředí)	Smluvní pokuty za porušení bezpečnostních, hygienických, požárních a ekologických předpisů	Garant: Ing. Boháček Milan (Generální ředitel)
Přílohy: 1 – Sazebník smluvních pokut	Nahrazuje: SM-UE-0309	Účinnost od: Dnem vydání

S ohledem na nutnost zabezpečení dodržování pravidel a předpisů v oblasti bezpečnosti práce, ochrany zdraví zaměstnanců, hygieny práce, požární ochrany, ochrany životního prostředí, ochrany majetku společnosti a s přihlédnutím ke skutečnosti, že činnosti na zařízení společnosti vykonávají smluvní partneři
vydávám

Smluvní pokuty za porušení bezpečnostních, hygienických, požárních předpisů a předpisů na ochranu životního prostředí.

Článek I Úvodní ustanovení

I.1 Povinnosti smluvních partnerů v oblasti bezpečnosti práce, ochrany zdraví zaměstnanců, hygieny práce, požární ochrany, ochrany životního prostředí, ochrany majetku společnosti tvoří nedílnou součást dokumentace pro výběrové řízení a jejich splnění je jednou ze základních podmínek hodnocení dodavatelů. Stejně požadavky se vztahují i na dodavatele se smluvním vztahem vzniklým mimo výběrové řízení a též na poddodavatele všech dodavatelů.

I.2 Požadavky této směrnice musí být zpracovány do všech smluvních vztahů, při jejichž plnění vstupují zaměstnanci dodavatele nebo jeho poddodavatelů na pracoviště společnosti (dále jen „objednatel“). Nedílnou součástí každé smlouvy je i Sazebník smluvních pokut, který tvoří přílohu č. 1 této směrnice.

Článek II Povinnosti smluvního partnera

II.1 Smluvní partner (dále jen „zhotovitel“) se zavazuje nést odpovědnost při výkonu a činnostech na zařízení nebo nemovitostech společnosti (objednatel) v případě, že jeho zaměstnanci poruší obecně závazné předpisy z oblasti bezpečnosti práce, ochrany zdraví, hygieny, požární prevence, ochrany životního prostředí, ochrany životního prostředí nebo vnitřní předpisy společnosti, se kterými byl prokazatelně seznámen.

II.2 Zhotovitel se zavazuje nést odpovědnost i pro případy, že k porušení dle čl. II.1 dojde zaměstnanci jeho poddodavatelů.

II.3 Zhotovitel se zavazuje uhradit za porušení předpisů smluvní pokutu ve výši uvedené v příloze č. 1 této směrnice. V případě, že zhotovitel smluvní pokutu neuhradí ve lhůtě splatnosti, vyhrazuje si objednatel právo úhrady smluvní pokuty jednostranným zápočtem.

Článek III Smluvní pokuta

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III.1 Smluvní pokuta za každé jednotlivé porušení předpisů je stanovena „Sazebníkem smluvních pokut“, který tvoří přílohu č. 1 této směrnice.

Článek IV

Povinnosti společnosti – objednatel

IV.1 Kontrolou dodržování předpisů z oblasti bezpečnosti práce, ochrany zdraví zaměstnanců, hygieny práce, požární ochrany, ochrany životního prostředí, ochrany majetku společnosti jsou ze strany objednatel pověřeni zaměstnanci uvedení ve smluvním vztahu jako technický dozor, zaměstnanci s oprávněním zápisu do stavebního deníku, zaměstnanci útvaru bezpečnosti a životního prostředí.

IV.2.1 Zaměstnanci objednatel pověřeni kontrolou, při zjištění porušení předpisů zaměstnanci smluvního partnera, provedou zápis do „Stavebního (montážního) deníku“. Zápis musí obsahovat:

- jméno a příjmení zaměstnance, který předpis porušil;
- stručný popis porušení nebo název porušeného právního nebo vnitřního předpisu;
- datum, hodina a místo porušení předpisu;
- jméno, příjmení, funkce a podpis pověřeného zaměstnance.

IV.2.2 V případě, že smluvní partner nevede „Stavební (montážní) deník“, oznámení o porušení předpisů provedou pověřeni zaměstnanci objednatel oznámením (písemně, elektronicky) smluvnímu partnerovi (zhotoviteli).

IV.3 Podklady pro vyúčtování smluvní pokuty předá pověřený zaměstnanec formou Interní zprávy vedoucímu ekonomického útvaru, kde navrhne výši pokuty dle přílohy č. 1 této směrnice a tato bude podepsána jeho nadřízeným zaměstnancem. Vedoucí ekonomického útvaru zajistí vystavení a odeslání faktury na smluvní pokutu zhotoviteli. V případě, že nebude smluvní pokuta zhotovitelem uhrazena v termínu, postupuje se dle odstavce II.3.

IV.4 Pokud oblast porušení předpisů nebude uvedena v příloze č. 1 této směrnice, pověřený zaměstnanec zkontrolovat výši pokuty s dotčeným ředitelem společnosti (objednatel), přičemž se vychází z obecně platných právních předpisů a vnitřních předpisů společnosti, vztahujících se k oblasti porušení.

Článek V

Závěrečná ustanovení

V.1 Ustanovením této směrnice nejsou dotčeny povinnosti vedoucích zaměstnanců na všech stupních řízení objednatel, stanovených zákoníkem práce.

V.2 Ukládám vedoucím zaměstnancům na všech stupních řízení prokazatelně s touto Směrnicí seznamovat všechny zaměstnance, kteří zabezpečují, řídí nebo provádějí úkony související s plněním Povinností zhotovitelů podle této Směrnice.

V.3 Směrnice tvoří nedílnou součást Pravidel chování zhotovitelů.

V.4 Kontrolou plnění této směrnice pověřuji vedoucí útvaru bezpečnosti a životního prostředí.

V.5 Tato směrnice je závazná pro společnost (objednatel) United Energy, a.s., Severočeská teplárenská, a.s., United Energy Invest, a.s., EVO-Komořany, a.s. a Gabit s.r.o.

Ing. Milan Boháček
generální ředitel

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SM-UE-1802_P1

Příloha č. 1 – Sazebník smluvních pokut

ke směrnici SM-UE-1802 Smluvní pokuty za porušení bezpečnostních, hygienických, požárních a ekologických předpisů

A. BEZPEČNOST PRÁCE

Číslo	Specifikace porušení	Sankce
(1)	Neprovedení prokazatelného vstupního nebo periodického školení o BOZP, PO, ŽP zaměstnanců zhotovitele a zaměstnanců jeho poddodavatelů, jehož součástí je i seznámení se specifickými podmínkami pracoviště objednatele (výbušné prostředí na pracovišti apod.).	5 000 Kč za osobu
(2)	Práce zaměstnanců zhotovitele nebo zaměstnanců jeho poddodavatelů bez splnění kvalifikačních předpokladů nebo bez odborné nebo zdravotní způsobilosti.	15 000 Kč za případ
(3)	Použití přístrojů, nářadí, strojů nebo zařízení v nevyhovujícím technickém stavu nebo bez doložitelných revizí a kontrol.	5 000 Kč za případ
(4)	Neoznačení pracovišť, předaných nebo pronajatých prostor identifikačními údaji; neumístění bezpečnostních značek (zákazy, příkazy, výstrahy a informace); nezavedení signálů.	5 000 za případ
(5)	Neoznačení zaměstnanců zhotovitele firemní značkou na pracovních oděvech (případně podobnou přiměřenou identifikaci zhotovitele).	2 000 Kč
(6)	Nedodržení povinnosti zhotovitele dle zákona č. 262/2006 Sb. předat písemně vyhodnocená rizika a přijatá opatření k ochraně před jejich působením objednateli (možnost v elektronickém provedení).	10 000 Kč za případ
(7)	Nesplnění povinností na úseku součinnosti zhotovitele s koordinátorem BOZP na staveništi dle zákona č. 309/2006 Sb. zejména neinformování o postupech, rizicích a opatřeních; neposkytování informací, neinformování o dalších poddodavatelích, neúčast na kontrolních dnech apod.	20 000 Kč za případ
(8)	Nedodržení „B“ a „BS“ příkazů pro práci na elektrickém zařízení a pro práce na strojním zařízení; provedení práce bez „B“, „BS“ příkazu.	20 000 Kč za případ
(9)	Nezajištění přítomnosti odpovědného zaměstnance zhotovitele, který komunikuje v českém jazyce, na pracovištích objednatele, kde se nachází zahraniční zaměstnanci.	10 000 Kč za případ
(10)	Nezajištění BOZP při provádění zemních prací a výkopů dle NV č. 591/2006 Sb. - zejména nezajištění řádného zakrytí nebo označení výkopů proti pádu osob, nezajištění stěn výkopů např. pažením proti sesutí apod.	20 000 Kč za případ
(11)	Nezajištění podmínek BOZP při práci ve výškách nad hloubkou dle NV č. 362/2005 Sb. - nepoužívání OOPP proti pádu nebo nezajištění odborné a zdravotní způsobilosti osob při práci ve výškách a nad volnou hloubkou; nedodržení standardů pro stavbu, případně nepoužívání lešení a závěsných lávek a dalších technických konstrukcí; nezajištění prostor, nad kterými se pracuje, a v nichž hrozí riziko pádu osob nebo	20 000 Kč za případ

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	předmětů.	
(12)	Neohlášení pracovního úrazu zaměstnance zhotovitele, který se přihodil na pracovišti objednatele; nezajištění součinnosti při šetření pracovního úrazu.	5 000 Kč za případ
(13)	Porušení zákazu požívání alkoholických nápojů a užívání jiných návykových látek, vstup pod jejich vlivem nebo odmítnutí dechové zkoušky na zjištění přítomnosti alkoholu nebo k provedení zkoušky na zjištění jiné návykové látky zaměstnancem zhotovitele nebo znemožnění takovéto zkoušky.	10 000 Kč za případ a vypovězení zaměstnance zhotovitele z pracovišť objednatele po dobu 1 roku
(14)	Nedodržování povinnosti nosit ochrannou přilbu.	500 Kč za případ
(15)	Nedodržování povinnosti nosit reflexní vestu v místech, kde je její nošení stanoveno povinně.	500 Kč za případ
(16)	Neodstranění závady bránící v provozu ostatním technologiím.	20 000 Kč za případ
(17)	Nedodržení příslušných právních předpisů, které se vztahují vyhrazená technická zařízení.	20 000 Kč za případ
(18)	Nerespektování bezpečnostních tabulek a dopravních značek v areálu objednatele; nedodržení nejvyšší povolené rychlosti motorových vozidel; nedodržení organizace nakládky vedlejších produktů (granulátu).	Do 20 000 Kč za případ
(19)	Neplnění povinností dle požadavků právních předpisů a technických norem, včetně ČSN 33 1600 ed.2, o kontrolách a revizích elektrických zařízení – elektrických spotřebičů.	5 000 Kč za případ

B. POŽÁRNÍ OCHRANA

Číslo	Specifikace porušení	Sankce
(1)	Porušení vyhlášky MV č. 87/2000 Sb. v platném znění, kterou se stanoví podmínky požární bezpečnosti při svařování	Do 30 000 Kč za případ
(2)	Porušení zákona PO ČNR č. 133/1985 Sb. ve znění pozdějších předpisů a vyhlášky MV č. 246/2001 Sb., o požární prevenci, v platném znění	Do 20 000 Kč za případ
(3)	Porušení zákazu kouření mimo vyhrazená místa ke kouření; v požárně nebezpečných prostorech, objektech a na pracovištích se zvýšeným požárním nebezpečím a nebezpečím výbuchu na pracovištích objednatele	10 000 Kč za případ
(4)	Neprovedení prokazatelného školení o požární ochraně zaměstnanců zhotovitele nebo zaměstnanců poddodavatelů.	5 000 Kč za osobu
(5)	Zneužití nebo jiné snížení účinnosti zařízení a věcných prostředků sloužících na ochranu před požáry, zejména bezdůvodné použití nebo krádež hasicích přístrojů; zneužití požární techniky a požárního signalizačního zařízení; neohlášení použití ručních hasicích přístrojů; poškození jiných věcných prostředků a zařízení požární ochrany.	Do 10 000 Kč za případ
(6)	Zahájení práce na pracovištích se zvýšeným požárním nebezpečím a s nebezpečím výbuchu bez vyplněního V-příkazu, nedodržování preventivních podmínek a	Do 20 000 Kč za případ

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	nezajištění následného požárního dohledu dle V-příkazu.	
(7)	Znemožnění přístupu k nouzovým východům, únikovým cestám nebo k rozvodným zařízením elektrické energie, plynu a vody a k prostředkům požární ochrany.	Do 20 000 Kč za případ
(8)	Nepředložení požárně technických charakteristik používaných, zpracovávaných nebo skladovaných látek a materiálů, nutných ke stanovení preventivních opatření k ochraně života, zdraví a majetku.	5 000 za případ
(9)	Nenahlášení množství hořlavých nebo výbušných látek a jejich umístění hasičskému záchrannému sboru podniku (HZSP UE, a.s.).	Do 10 000 Kč za případ

C. OCHRANA MAJETKU

Číslo	Specifikace porušení	Sankce
(1)	Porušení podmínek vstupu zaměstnanců zhotovitele do objektu objednatele.	Do 10 000 Kč za osobu + vypovězení zaměstnance zhotovitele Při opakovaném porušení zákaz vstupu do společnosti po dobu 1 roku
(2)	Poškození přístupového zařízení (brány, závory, turnikety, sloupky, terminály, čtečky apod.) a dopravního značení v areálu společnosti.	10 000 Kč za případ a náhrada škody
(3)	Neoprávněné použití identifikační karty jinou osobou, než které byla vydána. Zneužití povolení k vjezdu služebních vozidel vázaných na identifikační kartu řidiče. Vstup na identifikační kartu s neplatným bezpečnostním školením.	Do 10 000 Kč pro zhotovitele + vypovězení dotčených zaměstnanců při opakovaném porušení zákaz vstupu do společnosti po dobu 5 let
(4)	Ztráta, zničení nebo neodevzdání identifikační karty objednateli při ukončení pracovní činnosti nebo neohlášení těchto skutečností.	1 000 Kč za identifikační kartu
(5)	Zaměstnanec zhotovitele nemá identifikační kartu (nemůže se prokázat povolením ke vstupu) nebo zneužívá jednorázové (návštěvní) identifikační karty pro práci v areálu společnosti.	2 000 Kč za osobu
(6)	Odmítnutí prokázání totožnosti zaměstnance zhotovitele zaměstnanci ostrahy (ev. bezpečnostní agentuře) nebo pověřenému zaměstnanci společnosti ke kontrole.	5 000 Kč za osobu + vypovězení zaměstnance zhotovitele při opakovaném porušení zákaz vstupu do společnosti po dobu 1 roku
(7)	Odmítnutí předložení zavazadla ke kontrole zaměstnanci ostrahy či pověřenému zaměstnanci společnosti.	5 000 Kč za osobu
(8)	Neumožnění kontroly motorového vozidla, přiváženého nebo odváženého materiálu, zaměstnancům ostrahy.	Do 10 000 Kč za případ + vypovězení zaměstnance zhotovitele při opakovaném porušení zákaz vstupu do společnosti po dobu 1 roku
(9)	Neoprávněné vynášení a vyvážení věcí z objektů objednatele.	Do 10 000 Kč za případ + vypovězení zaměstnance zhotovitele při opakovaném porušení zákaz vstupu do společnosti po dobu 10 let
(10)	Nepovolené vnášení střelných zbraní a výbušnin do areálu společnosti.	Do 20 000 Kč za případ
(11)	Nevrácení zapůjčených funkčních klíčů od pronajatých prostor vedoucímú správy stavebních objektů po ukončení nájmu nebo ukončení práce smluvní činnosti (zajištění šatnování), kopírování klíčů bez vědomí dotčených zástupců společnosti.	2 000 Kč za případ
(12)	Nezabezpečení pronajatých prostor	Do 10 000 Kč za případ

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(13)	Opakované neuzavření či neuzamčení vlastních dopravních prostředků v areálu společnosti.	Do 5 000 Kč za případ
(14)	Vstup zahraničních návštěv do areálu společnosti bez povolení pověřeného zástupce společnosti.	Do 20 000 Kč za případ
(15)	Fotografování a filmování ve společnosti bez schválené žádosti.	Do 10 000 Kč za případ
(16)	Stání vozidel mimo prokazatelně vymezená parkovací místa, případně odstavné plochy v areálu společnosti.	5 000 Kč za případ
(17)	Odstavení dopravního prostředku, kterému byl povolen vjezd na jednorázové povolení, v areálu společnosti po 22.00 hod. bez příslušného povolení	5 000 Kč za případ

D. OCHRANA ŽIVOTNÍHO PROSTŘEDÍ

Číslo	Specifikace porušení	Sankce
(1)	Porušení platné legislativy pro oblast ochrany životního prostředí (půdní fond, ochrana ovzduší, ochrana klimatu – regulované látky, ochrana přírody, nakládání s vodami, chemickými látkami, odpady a obaly) a vnitřních předpisů společnosti (zejména provozních manipulačních a havarijních řádů pro oblast ochrany životního prostředí).	Do 30 000 Kč za případ
(2)	Okamžité nenahlášení provozních nehod, případně havárií ovlivňujících jakostní parametry životního prostředí (půda, voda, ovzduší).	Do 20 000 Kč za případ
(3)	Porušení zákazu manipulace s otevřeným ohněm na volném prostranství, zejména spalování odpadů a nepotřebných materiálů.	Do 20 000 Kč za případ
(4)	Nakládání s nebezpečnými odpady bez povolení orgánů státní správy a odstraňování odpadů v rozporu se smluvním vztahem a platnými právními předpisy. Nenahlášení odvozu nebezpečných odpadů, jehož původce je objednatel a to v dostatečném časovém předstihu před uskutečněním nakládky a odvozu odpadů.	Do 50 000 Kč za případ
(5)	Nedodržení povinnosti třídění a shromažďování odpadů dle jejich charakteru a vlastností na předaném staveništi i mimo něj, zejména: nezabezpečení dostatečného množství vhodných sběrných nádob umožňujících třídění odpadů; neoznačení shromažďovacích prostředků a shromažďovacích míst; nepořádek na shromažďovacích místech odpadů, ovlivňující činnost provozu zařízení; nedostatečné zajištění shromažďovacích míst odpadů a druhotných surovin (kovů); odvoz odpadů, využitelných jako druhotná surovina za účelem vlastního využití bez souhlasu společnosti; shromažďování odpadů mimo vyhrazená shromažďovací místa bez odpadních nádob nebo založení nepovolené skládky odpadů; nezabezpečení odpadních nádob na komunální odpad a jeho vyřaditelné složky (zejména pro odpady, které nesmí být ukládány na skládky), způsobující nepořádek na předaném staveništi, šatnových prostorách, sociálních zařízeních nebo pronajatých prostorách i mimo něj; odkládání průmyslového odpadu do kontejnerů v areálech společnosti, které jsou určeny pro	Do 30 000 Kč za případ u nebezpečných odpadů (N), do 20 000 Kč za případ u ostatních odpadů (O), do 10 000 Kč za případ u komunálních odpadů

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	komunální odpad; využívání nádob na odpady v areálu společnosti bez jeho písemného souhlasu; porušení konkrétních podmínek nakládání s odpady, uvedených ve stavebním nebo montážním deníku nebo jiným prokazatelným dokladem; nesplnění termínu zadaného objednatelem k odstranění odpadů mimo předané prostory.	
(6)	Únik ropných, chemických a jiných závadných látek, zejména: závažné ohrožení jakosti povrchových vod únikem ropných a chemických nebo jiných závadných látek do kanalizace společnosti; závažné ohrožení jakosti podzemních vod a znečištění zeminy neodbornou nebo nedbalou manipulací s ropnými látkami nebo chemickými látkami, jejich obaly nebo odpady; porušení zákazu splachování kalů, popelovin, vápence a podobných nerozpustných látek do kanalizačních vpustí; vylévání chemických látek v ředěném i neředěném stavu do kanalizačních vpustí.	Do 20 000 Kč za případ
(7)	Nenahlášení úniku ropných, chemických a jiných závadných látek do kanalizačních vpustí společnosti.	Do 20 000 Kč za případ
(8)	Provádění nepovolené údržby a mytí automobilů – porušení zákazu mytí osobních, nákladních aut a mechanizačních prostředků v areálech společnosti.	5 000 Kč za případ

E. OSTATNÍ

Číslo	Specifikace porušení	Sankce
(1)	Provádění prací pro třetí smluvní stranu bez platného povolení.	Do 20 000 Kč za případ
(2)	Manipulace na technologickém zařízení společnosti bez písemného souhlasu společnosti.	Do 20 000 Kč za případ
(3)	Provádění zemních prací bez povolení společnosti a bez vytýčení inženýrských sítí.	Do 20 000 Kč za případ
(4)	Poškození podzemních elektrických zařízení, na které byl zhotovitel upozorněn.	Do 20 000 Kč za případ
(5)	Poškození produktovodů při zemních i nadzemních pracích (voda, plyn, vzduch, parovody, horkovody, elektrické vedení) nebo železniční vlečky.	Do 50 000 Kč za případ a náhrada škody
(6)	Nedodržení odpovídajícího způsobu skladování veškerých surovin zhotovitele, které mohou ohrozit zdraví zaměstnanců a životní prostředí; nezabezpečení těchto látek proti neodborné manipulaci, zneužití a úniku.	Do 10 000 Kč za případ
(7)	Porušení zákonných předpisů a vnitřních předpisů pro nakládku, přepravu a dopravu nebezpečných věcí (chemické látky, odpady, materiály, zařízení).	Do 10 000 Kč za případ
(8)	Nerespektování obecně platných právních předpisů a závazných předaných vnitřních řídicích předpisů společnosti.	10 000 Kč za případ

Pozn. V případě uvádění právního předpisu se má za to, že je předpisem v platném znění, včetně jeho platných prováděcích a souvisejících předpisů.

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. No.:	Supplement 12 – Technical Specification of the CONTRACTOR	Ref. No.:

SUPPLEMENT 12

TECHNICAL SPECIFICATION OF THE CONTRACTOR

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization DRAFT CONTRACT FOR WORK	CONTRACTOR
Ref. No.:	Supplement 12 – Technical Specification of the CONTRACTOR	Ref. No.:

Supplement 12 – Technical specification of the Contractor shall be elaborated and submitted by the contractor/participant in Volume C12 of the Preliminary Offer/Offer (as a supplement to the CONTRACT FOR WORK) in accordance with the purchaser's instructions for processing of Volume C12 contained in Part 4 of the Tender Documentation.

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 13 – Information on processing of personal data obtained from data subject and from other sources	Ref. No.:

SUPPLEMENT 13

INFORMATION ON PROCESSING OF PERSONAL DATA OBTAINED FROM DATA SUBJECT AND FROM OTHER SOURCES

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 13 – Information on processing of personal data obtained from data subject and from other sources	Ref. No.:

*This **Supplement 13 – Information on processing of personal data obtained from data subject and from other sources** will be submitted by the Contractor/Participant within Section C13 of the preliminary tender/tender (as an annex to the CONTRACT FOR WORK) in conformity with the Purchaser's instructions for compilation of Section C13, comprised in Part 4 of the Tender Dossier.*

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
Ref. No.:	DRAFT CONTRACT FOR WORK Supplement 13 – Information on processing of personal data obtained from data subject and from other sources	Ref. No.:

INFORMATION ON PROCESSING OF PERSONAL DATA OBTAINED FROM DATA SUBJECT AND FROM OTHER SOURCES

Preamble

This document aims to provide information on the conditions under which personal data will be processed in respect of employees of a business partner (hereinafter a “Contractor”). This duty is imposed on United Energy, a. s.¹ by Articles 13 and 14 GDPR².

This document is intended for employees of the Company’s Contractors, and the Contractors are obliged to familiarise their employees, including employees of their Subcontractors, with this document.

Personal data processed

The processing relates to personal data of the Contractors’s employees as defined in Art. 4 (1) GDPR, in particular:

- ▶ name, surname, date of birth, and academic degrees, if applicable;
- ▶ network identifiers (e-mail addresses etc.) concerning the performance of work for our Company;
- ▶ records of training in occupational safety and health protection (OSHP) and fire protection in our Company;
- ▶ photograph and details given on the identification card enabling access to the Company’s premises.

1) Extent and purpose of personal data processing

A) The personal data controller [within the meaning of Art. 4 (7) GDPR] is United Energy, a.s., Id. No.: 273 09 959, a company with its registered office in Most, Komořany, Teplárenská 2, Postal Code 434 03, registered in the Commercial Register kept by the Regional Court in Ústí nad Labem, Section B, File 1722. Website: www.ue.cz, data box ID: krrgtsm.

B) *In matters of protection of your personal data, you may contact directly Ing. Hana Tvrzníková, at the address of the Company’s registered office, telephone +420 476 447 145, e-mail: hana.tvrznikova@ue.cz. If the Company appoints a data protection officer, you will be informed of his/her contact details.*

C) Legal basis and purpose of personal data processing

When the Contractor, ..., entered into the relevant supply contract with our Company, you, as an employee of our Contractor, became a person performing work for our Company. The Company will process your personal data:

- ▶ As required for the performance of the contract (agreement) concluded with the Company on the basis of which you are to perform work for the Company (and for the implementation of measures adopted before the conclusion of the contract at request of the data subject);
- ▶ As required for compliance with a legal obligation to which the data controller is subject:
 - keeping the occupational safety and health protection agenda;
 - keeping the fire protection agenda;
 - any other tasks following from the performance of legal regulations.

D) Your personal data will be transferred to the public authorities within the scope stipulated by law.

E) Your personal data will not be transferred without your consent to third countries (i.e. countries outside the scope of the GDPR) or international organisations.

¹ The full identification details of the company are given in Art. 1/A, hereinafter the “Company”

² In this entire document, GDPR means Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

PURCHASER United Energy, a.s.	Environmental Improvements on TKY II Heating Plant - Wet Desulfurization	CONTRACTOR
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2) Duration of personal data processing and other related information

A) Your personal data will be processed for at least the duration of the contractual relationship between our Company and the Contractor, ... and then for a period of five years after its termination; data will be retained beyond that period if so required by the law.

B) During the period of processing of your personal data by the Company, you have the right [based on Art. 14 (2)(c) GDPR] to request from the data controller access to your personal data, their rectification or erasure, or restriction of processing; the right to object to processing; and the right to data portability unless this is at variance with legal regulations or legitimate interests of the employer or third parties.

C) You may exercise your rights (including the right to object) with the personal data controller, i.e. our Company. You may contact us in writing, by telephone or by e-mail (the contact details are given in part 1. B) this information material).

D) If you believe that a law or the GDPR has been breached in the processing of your personal data, you have the right to file a complaint with the supervisory authority in the Czech Republic:

Office for Personal Data Protection

ul. pplk. Sochora 27,

170 00 Prague 7

(Tel. +420 234 665 111; e-mail: posta@uoou.cz; data box: qkbaa2n; website: <https://www.uoou.cz>).

E) The provision of personal data is a statutory or contractual requirement related to the contract concluded by and between our Company and the Contractor, ..., and you therefore have to provide the personal data; if you do not provide the data, the relevant contract (agreement) will not be performed, with the ensuing consequences, which you have been familiarised with.

F) The processing of personal data in the Company involves neither automated decision-making nor profiling, as specified in Art. 22 (1) and (4) GDPR.

3) Other purposes of personal data processing

Your personal data will not be further processed for any purposes other than the purpose for which they were collected.

4) Additional information

A) Your personal data will be stored in both electronic and physical (printed) forms. Documents in electronic form are stored on local disks of employees' workstations and on backup media. If an external storage is used, e.g. cloud services, properly secured systems will always be used, complying with the applicable legal regulations, including the GDPR. Disks with data are secured by encryption and the data are stored in a user profile verified in our Company's computer domain. Documents in physical form are stored in lockable cabinets where only authorised persons have access. These lockable cabinets are located in buildings secured against unauthorised access. If personal data are stored in archives, these archives are properly secured against access by unauthorised persons and also against unauthorised access to your personal data.

B) Only employees of our Company entrusted with specific tasks pertaining to the purpose of personal data processing have access to your personal data.

C) More detailed conditions of personal data protection in the Company are laid down in the relevant Policy.



EVROPSKÁ UNIE
Fond soudržnosti
Operační program Životní prostředí



PROCUREMENT DOCUMENTS

for Public Contract
Ref.no. Z2018-033521

**Environmental Improvements on TKY II Heating
Plant – Wet Desulfurization**

PART 3

TECHNICAL REQUIREMENTS

The Contracting Authority for this Public Contract (industry public contract) “**Environmental Improvements on TKY II Heating Plant – Wet Desulfurization**”, United Energy, a.s., has specified the following technical requirements for all Contractors / Participants in the procurement process.

The Contracting Authority has set out its technical conditions in Supplement 1 to the Draft Contract for Work, “Purchaser’s Technical Requirements on the WORK”, which is included in Part 2 of the Procurement Documents.

Pursuant to Section 61, Subs. 4 of Czech Republic Law no. 134/2016, as currently in effect, the Contracting Authority has set the minimum technical conditions for this Public Contract as:

Desulfurization solution must be capable of meeting emission limits of $SO_2 \leq 100 \text{ mg/Nm}^3 R$ and $TZL \leq 7 \text{ mg/Nm}^3 R$.



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PART 4

**FORMS AND DETAILED INSTRUCTIONS FOR REQUESTS TO
PARTICIPATE AND TENDERS**

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PART 4
FORMS AND DETAILED INSTRUCTIONS FOR REQUESTS TO PARTICIPATE
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REQUEST TO PARTICIPATE

1. Participants shall prepare and submit **Requests to Participate** in accordance with the Procurement Documents, particularly Sections 13 through 16 of Part 1 of the Procurement Documents.
2. As part of their Requests to Participate, Participants shall submit documents demonstrating their qualifications according to the Purchaser's requirements given in Section 14 of Part 1 of the Procurement Documents.
3. Qualifications pursuant to Section 14.1.4-a shall be demonstrated using the template of the List of Construction Projects Executed by the Participant over the Past 12 years, which is included below in Addendum 1.
4. Requests to Participate shall further specify the Participant's representative authorized to negotiate with the Purchaser in matters of the Request to Participate, i.e.:

<i>First and last name:</i>	
<i>Address:</i>	
<i>Telephone:</i>	 / <i>mobile:</i>
<i>Fax:</i>	
<i>E-mail:</i>	
<i>Participant Data Box ID</i>	



Addendum 1

Template: List of Construction Projects Executed by the Participant over the Past 12 years

LIST OF CONSTRUCTION PROJECTS EXECUTED BY THE PARTICIPANT OVER THE PAST 12 YEARS

Public Contract: **Environmental Improvements of TKY II Heating Plant - Wet Desulfurization**

The Participant:

..... registered address Business Registration no.,

in compliance with the Purchaser's request of Section 14, Subs. 14.1.4-a of Part 1 of the Procurement Documents, hereby presents the following construction projects (contracts), duly executed and completed in the past 12 years:

i) Manufacture and execution as principal supplier of a flue-gas desulfurization project using the <u>wet lime scrubbing</u> method, with a minimum volume of desulfurized gas of 400,000 Nm ³ /h	
1.	Contract name:
	Contractor trading name:
	Contract location:
	Subject of contract:
	Monetary value:
	Period of execution:
	Date of project acceptance by client:
	Client trading name:
	Client reference (<i>first and last name of client representative able to confirm reference, incl. phone and e-mail</i>):
	Brief description of project scope and basic parameters:
n.	Contract name:
	Contractor trading name:



PROCUREMENT DOCUMENTS
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PART 4
FORMS AND DETAILED INSTRUCTIONS FOR REQUESTS TO PARTICIPATE
AND TENDERS

	Contract location:	
	Subject of contract:	
	Monetary value:	
	Period of execution:	
	Date of project acceptance by client:	
	Client trading name:	
	Client reference (<i>first and last name of client representative able to confirm reference, incl. phone and e-mail</i>):	
	Brief description of project scope and basic parameters:	
ii) Manufacture and execution through a third party of a flue-gas desulfurization project using the <u>wet lime scrubbing</u> method, with a minimum volume of desulfurized gas of 400,000 Nm ³ /h		
1.	Contract name:	
	Contractor trading name:	
	Contract location:	
	Subject of contract:	
	Monetary value:	
	Period of execution:	
	Date of project acceptance by client:	
	Client trading name:	
	Client reference (<i>first and last name of client representative able to confirm reference, incl. phone and e-mail</i>):	
	Brief description of project scope and basic parameters:	

n.	Contract name:	
	Contractor trading name:	
	Contract location:	
	Subject of contract:	
	Monetary value:	
	Period of execution:	
	Date of project acceptance by client:	
	Client trading name:	
	Client reference (<i>first and last name of client representative able to confirm reference, incl. phone and e-mail</i>):	
	Brief description of project scope and basic parameters:	
iii) Execution as principal supplier of a flue-gas desulfurization project using the <u>wet lime scrubbing</u> method, with a minimum volume of desulfurized gas of 400,000 Nm³/h		
1.	Contract name:	
	Contractor trading name:	
	Contract location:	
	Subject of contract:	
	Monetary value:	
	Period of execution:	
	Date of project acceptance by client:	
	Client trading name:	
	Client reference (<i>first and last name of client representative able to confirm reference, incl. phone and e-mail</i>):	

	Brief description of project scope and basic parameters:	
n.	Contract name:	
	Contractor trading name:	
	Contract location:	
	Subject of contract:	
	Monetary value:	
	Period of execution:	
	Date of project acceptance by client:	
	Client trading name:	
	Client reference (<i>first and last name of client representative able to confirm reference, incl. phone and e-mail</i>):	
	Brief description of project scope and basic parameters:	
iv) Execution as subcontractor of complete main system delivery for a flue-gas desulfurization project using the <u>wet lime scrubbing</u> method, with a minimum volume of desulfurized gas of 400,000 Nm ³ /h		
1.	Contract name:	
	Contractor trading name:	
	Contract location:	
	Subject of contract:	
	Monetary value:	
	Period of execution:	
	Date of project acceptance by client:	
	Client trading name:	



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	Client reference (<i>first and last name of client representative able to confirm reference, incl. phone and e-mail</i>):	
	Brief description of project scope and basic parameters:	
n.	Contract name:	
	Contractor trading name:	
	Contract location:	
	Subject of contract:	
	Monetary value:	
	Period of execution:	
	Date of project acceptance by client:	
	Client trading name:	
	Client reference (<i>first and last name of client representative able to confirm reference, incl. phone and e-mail</i>):	
	Brief description of project scope and basic parameters:	

The projects listed above meet in full the criteria of the qualification required by Section 14.1.4-a of Part 1 of the Procurement Documents.

In on

.....

Participant authorized representative full name and signature



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VOLUME A
TENDER COVER LETTER

1. As part of **Volume A of the Indicative Tender / Tender**, the Participant / Contractor shall submit a **Tender Cover Letter** drafted on the cover letter template given below, dated and signed as required by Section 21.5 / Section 27.3 of Part 1 of the Procurement Documents. If the signatory is a Power of Attorney or authorization holder on behalf of the Participant's / Contractor's regular authorized signatory, this Volume A shall further include the Power of Attorney or authorization in question.

Cover Letter Template:

Contractor / procurement process Participant:

Contractor / Participant trading
name:

Contractor / Participant registered
address:

Business Registration no.:

VAT no.:

a company registered in Section, File of the Business Registry of
the [court name]

First and last names of all
authorized signatories:

Signatories' manner of
representation of the company, as
listed in the Business Registry:

Data Box ID:

To: *United Energy, a.s.
2 Teplárenská St., 434 03 Most-Komořany, Czech Republic*

On:

Re: **Indicative Tender / Tender** for Public Contract
"Environmental Improvements of TKY II Heating Plant - Wet Desulfurization"
contract no. Z2018-033521

Dear Sirs,

*in response to your invitation to submit **Indicative Tenders / Tenders** of [date of invitation], we undersigned and duly authorized hereby offer to execute the Public Contract "Environmental Improvements of TKY II Heating Plant - Wet Desulfurization" in the scope and on the terms specified in your Procurement Documents.*

*The total offered price for the Work (without VAT applicable in CR), as given in our **Indicative Tender / Tender** no. [no. of tender], is CZK [insert price in CZK].*

*We hereby declare that, before submitting our **Indicative Tender / Tender**, we have obtained and familiarized ourselves with all information required to clearly specify the quantities and types of goods, works, and services that are to be delivered in the execution of this Public Contract, as well as with your terms as given in the Procurement Documents, and that these are clear and understood by us.*



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Our Representative authorized to negotiate with you, the Purchaser, in matters of our **Indicative Tender / Tender**, shall be:

First and last name:	
Address:	
Telephone:	 / mobile:
Fax:	
E-mail:	
Data Box ID	

Our Representative authorized to bid on our behalf in the electronic auction shall be:

First and last name:	
Telephone:	 / mobile:
E-mail:	

.....

(Participant authorized signatory signature)

Note: text highlighted in turquoise will be adapted by the Purchaser depending on the phase of the procurement process

2. Volume A of the **Tender** shall also include the Security pursuant to Section 28 of Part 1 of the Procurement Documents.



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VOLUME B
DRAFT CONTRACT FOR WORK

1. **Volume B of the Indicative Tender / Tender** shall contain the Participant's **Draft Contract for Work** (i.e., the text of the Contract itself, without its Supplements), which has been drafted by the Purchaser and forms the first section of Part 2 of the Procurement Documents.
2. The Participant's changes to the Draft Contract for Work (the Contract text, without Supplements) shall be limited to adding the information required by the Purchaser in Section / Paragraph 1, 7.1-e, 13.1 Draft Contract for Work as Submitted with Tenders, and to signing pursuant to Section 27.3 of Part 1 of the Contract Documents.
3. Participants may, as part of their **Indicative Tenders**, propose minor adjustments to the Draft Contract text, insofar as such may improve clarity and/or transparency (remove ambiguities or errors), and provided that no such adjustment materially impacts the Purchaser / Contracting Authority's rights or the Participant / Contractor's obligations.
4. The Participant's potential adjustments as described in the preceding paragraph shall also be submitted in this Volume B of the Indicative Tender as a **separate document** based on the template given in Addendum 1 to this Volume B.
5. Any adjustments the Participant may make to the Draft Contract text shall be interpreted as comments by the Purchaser. On the basis of such comments, the Purchaser may decide to change the Procurement Documents during the Indicative Tender Negotiations phase pursuant to Section 25 of Part 1 of the Procurement Documents. That is, Participants will not be able to stipulate their own changes and amendments to the Contract. **In no event shall the Purchaser be bound to accept Participant changes proposed pursuant to Point 2 above.**
6. In the event the Participant has no adjustments to the Draft Contract to propose, this Volume B shall, in addition to the Draft Contract, contain the Participant's statement to the effect that the Participant accepts without reservation the text of the Draft Contract for Work proper in the form drafted by the Purchaser and presented as the introduction to Part 2 of the Procurement Documents.
7. The Purchaser reserves the right to change the text of the Draft Contract by amending the Procurement Documents during Indicative Tender negotiations pursuant to Section 25 of Part 1 of the Procurement Documents; this includes unilateral changes, if such are deemed necessary on the basis of tender negotiations. The Purchaser explicitly states that such changes may be made in contractual penalty provisions, as well as any other parts of the Draft Contract text affected, if required as a result of a change in the tender evaluation criteria arising from tender negotiations pursuant to Section 34.2 of Part 1 of the Procurement Documents, or as a result of changes, reductions, or expansions of the guaranteed parameters listed in Supplement 2 to the Draft Contract for Work, or of other changes to the award criteria, with the exception of minimum technical requirements, always so as to keep the Contract text in line with the changes in question.



Addendum 1

Template for Draft Contract for Work adjustment proposals

Participant:	
Section	Title
1.	PARTIES TO THE CONTRACT
2.	TERMS AND DEFINITIONS
3.	LEGAL INTERPRETATION OF THE CONTRACT
4.	CONTRACT DOCUMENTS
5.	APPLICABLE LAW
6.	RESOLUTION OF DISPUTES
7.	NOTICES
(Example)	Original text:
7.1 (a)	<i>Notices sent via e-mail containing digitized or scanned text to also be hand-delivered, mailed, or delivered by courier no later than three (3) Days after the e-mail in question has been sent, shall be considered delivered on the Day the e-mail is sent;</i>
	<i>Proposed change:</i>
7.1 (a)	<i>Notices sent via e-mail containing digitized or scanned text to also be hand-delivered, mailed, or delivered by courier no later than two (2) Days after the e-mail in question has been sent, shall be considered delivered on the Day the e-mail is sent;</i>
8.	PURPOSE OF THE WORK
9.	SUBJECT OF THE CONTRACT – THE WORK
10.	WORK TIMETABLE
11.	CONTRACTOR'S OBLIGATIONS IN EXECUTION OF THE WORK
12.	PURCHASER'S COOPERATION
13.	CONTRACT PRICE
14.	TERMS OF PAYMENT
15.	TAXES, CUSTOMS AND FEES



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16.	BANK GUARANTEES FOR THE WORK AND FOR THE DEPOSIT
17.	LICENSES AND RIGHTS OF USE TO TECHNICAL INFORMATION
18.	INFORMATION AND CONTRACT DOCUMENTS SECURITY
19.	PARTIES' REPRESENTATIVES
20.	INFORMATION SUBMITTED TO PURCHASER
21.	SUBCONTRACTING
22.	STANDARDS AND LEGISLATION
23.	ENGINEERING WORK, DOCUMENTATION
24.	EXECUTION OF THE WORK
25.	DELIVERY AND DOCUMENTATION
26.	SHIPPING, PACKAGING INSTRUCTIONS
27.	WORK QUALITY ASSURANCE
28.	ASSEMBLY AND MECHANICAL COMPLETION
29.	COMMISSIONING
30.	PROVISIONAL ACCEPTANCE OF THE WORK
31.	TRIAL OPERATION
32.	GUARANTEE MEASUREMENT DURING TEST "B", FINAL ACCEPTANCE OF THE WORK
33.	EMERGENCY WORKS
34.	PURCHASER OPERATIONS AND MAINTENANCE STAFF TRAINING
35.	REPLACEMENT PARTS AND RAPID-WEAR PARTS
36.	POST-WARRANTY SERVICING
37.	SITE AND ASSEMBLY SITES
38.	ADMINISTRATION RULES, OCCUPATIONAL HEALTH AND SAFETY
39.	WASTE MANAGEMENT, ENVIRONMENTAL PROTECTION
40.	WORK SECURITY
41.	GUARANTEED PARAMETERS



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42.	CONTRACTUAL PENALTIES
43.	LIABILITY FOR DEFECTS, QUALITY GUARANTEE
44.	COMPENSATION FOR DAMAGE, LIMITATION OF LIABILITY
45.	REIMBURSEMENT FOR PATENT CLAIMS
46.	TRANSFER OF OWNERSHIP
47.	DUE CARE OF THE WORK, TRANSFER OF LIABILITY FOR DAMAGE TO THE WORK
48.	PROPERTY LOSS AND DAMAGE, PERSONNEL ACCIDENT AND INJURY, CLAIM SETTLEMENT
49.	INSURANCE
50.	FORCE MAJEURE
51.	CHANGE PROCEEDINGS
52.	INTERRUPTION OF WORKS
53.	WITHDRAWAL FROM THE CONTRACT
54.	ASSIGNMENT OF CONTRACT AND PROHIBITION OF RETENTION
55.	ETHICAL CONDUCT BETWEEN THE PARTIES
56.	FINAL PROVISIONS



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VOLUME C
SUPPLEMENTS TO THE DRAFT CONTRACT FOR WORK

This **Volume C – Supplements to the Draft Contract for Work** shall be, for the purposes of Indicative Tenders / Tenders, further divided into Volumes C1 through C13, as specified below.



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VOLUME C1
PURCHASER'S TECHNICAL REQUIREMENTS OF THE WORK

1. **Volume C1 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 1 – Purchaser's Technical Requirements on the Work**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. Considering that the technical specifications given in Supplement 1 consist of functional and performance requirements in the meaning of [Section 89 \(1a\) of Act No. 134/2016, as amended](#), the Contractor / Participant may, as part of its **Indicative Tender**, propose minor adjustments to the text of Supplement 1, insofar as it may improve the clarity and / or transparency of the text, and / or bring Supplement 1 in line with Supplement 12 where the Contractor / Participant offers, on the basis of his know-how and engineering experience, to use Best Available Techniques which technical and economic parameters exceed the requirements of Supplement 1.
3. The Participant's potential adjustments as described in the preceding Point 2 shall also be submitted in this Volume C1 of the **Indicative Tender** as a **separate document** in a format equivalent to that used for adjustment proposals in Addendum 1 to Volume B.
4. Any adjustments the Participant may make to Supplement 1 shall be discussed during the Indicative Tender Negotiations phase pursuant to Section 25 of Part 1 of the Procurement Documents. **In no event shall the Purchaser be bound to accept such Participant changes.**
5. No **Addenda** to Supplement 1 shall be submitted with Indicative Tenders / Tenders.



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VOLUME C2
GUARANTEED PARAMETERS

1. **Volume C2 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 2 – Guaranteed Parameters**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. As part of their Indicative Tenders / Tenders, Participants shall **only** amend Supplement 2 by adding the information required by the Purchaser in the following sections of Supplement 2:
 - Lime consumption, Section 2.2, Subsections 2.2.1 through 2.2.6.
 - Dry hydrate route, Section 2.3 b), Subsection 2.3.2
 - Electrical energy consumption (power requirement), Section 2.4, Subsections 2.4.1 through 2.4.6
 - Compressed air consumption sourced from purchaser, Section 2.5, Subsections 2.5.1 through 2.5.14
 - Total water consumption, Section 2.7, Subsections 2.7.1 through 2.7.3.
 - Work availability, Section 2.8, Subsections 2.8.1 and 2.8.2.
 - Guarantee correction curves (Section 3) to be applied during the Guarantee Measurement. These correction curves define changes in guaranteed parameters (e.g. reagent and electricity consumption, SO₂ scrubbing efficiency) at different input condition combinations.

The guarantee correction curves will cover input conditions from 0 to 110% of maximum, further specifying operating range.

Furthermore, balance diagrams for all Guaranteed parameters shall be submitted and balances shall be specified for the production of stabilizate and energo-gypsum (FGD gypsum) - see D3 – Supplement 01 Subsection 5.3.1.



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VOLUME C3
DOCUMENTATION



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1. **Volume C3 of the Indicative Tender / Tender** shall contain the Participant's submission of **Supplement 3 – Documentation**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. The Participant / Contractor may not make any changes to Supplement 3.



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VOLUME C4
TIMETABLE AND EXECUTION PLAN FOR THE WORK

1. **Volume C4 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 4 – Timetable and Execution Plan for the Work**, which shall be drafted by the Participant pursuant to the Procurement Documents, and shall in particular reflect all of the following Purchaser requirements:
- a) The Timetable and Execution Plan for the Work shall describe all activities of the Participant / Contractor and any Subcontractors it may engage in the execution of the Work
 - b) The Timetable and Execution Plan for the WORK shall cover the period **from** the signing of the Contract for Work **until** the signing of the Provisional Acceptance protocol for the WORK, including the subsequent Trial Operation of the WORK, and shall comply with the Purchaser-specified timetable given in Section 10.1 of the Draft Contract for Work included in Part 2 of the Procurement Documents, as well as with the documentation submission timetable given in Section 7 of Supplement 3 to the CONTRACT.
 - c) The Timetable and Execution Plan for the WORK shall contain specific dates particularly for the following:
 - 1. Signing of the Contract for Work (being the starting point of the Timetable and Execution Plan); planned signing date is **May 31, 2019**
 - 2. Effective date of the contract; planned within 30 calendar days from signing
 - 3. Dates for the fulfillment of the part-payment milestones specified in Section 10 of the Contract
 - 4. Submission of Documentation for Execution of the Project, as prepared by Contractor and approved by Purchaser, pursuant to Supplement 3 to Part 2 of the Procurement Documents
 - 5. Submission of other WORK documentation, as prepared by Contractor and approved by Purchaser, pursuant to Supplement 3 to Part 2 of the Procurement Documents
 - 6. Acceptance of custody of the WORK construction site
 - 7. Provision of materials, manufacturing, deliveries
 - 8. Progress of construction on and completion of individual structural systems (SO) and technical systems (IO)
 - 9. Progress of assembly on individual functional systems (PS) and functional subsystems (DPS)
 - 10. Expected dates of heating plant shutdown as specified in Sections 24.3 of Part 2 of the Procurement Documents – the Draft Contract for Work
 - 11. Mechanical Completion of individual functional systems / subsystems (PS / DPS), incl. individual system and subsystem (PS / DPS) tests
 - 12. Mechanical Completion of the WORK
 - 13. Start and end of preparations for Work Complex Tests
 - 14. Purchaser personnel training on the WORK
 - 15. Start and end of WORK Complex Tests, including Test "A"
 - 16. Star and end of WORK Performance Test
 - 17. Provisional Acceptance of the WORK
 - 18. Trial Operation of the WORK

- d) Individual activities shall be clearly defined as to their specifics, time allotment, beginning and end, and shall include logical linkages with related activities.
- e) The Timetable and Execution Plan for the WORK shall demonstrate that the WORK can be executed according to the Purchaser's timetable as given in Part 2 of the Procurement Documents.
- f) The Timetable and Execution Plan for the WORK shall, in particular, respect all procedures specified in the Procurement Documents, e.g. for consultation and Purchaser approval of documentation, etc., as well as the initial and limit conditions for the Work's execution specified in the Procurement Documents.
- g) The Timetable and Execution Plan for the WORK shall use days as its unit of resolution.



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VOLUME C5
PURCHASER'S COOPERATION



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1. **Volume C5 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 5 – PURCHASER's Cooperation**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. The Participant / Contractor shall, when preparing its Indicative Tender / Tender, fill in the fields labeled "Required by Contractor" to list its requirements on the Purchaser's cooperation pursuant to Section 12.8 of the Draft Contract for Work in Part 2 of the Procurement Documents.



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VOLUME C6
TRAINING



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1. **Volume C6 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 6 – Training**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. The Participant / Contractor may not make any changes to Supplement 6.



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VOLUME C7
LIST OF SUBCONTRACTORS

1. **Volume C7 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 7 – List of Subcontractors**, which shall be drafted by the Participant pursuant to the Procurement Documents, and shall in particular reflect all of the following Purchaser requirements:

- a) The Participant / Contractor shall provide a list of the subcontractors who shall take part in executing the Work, on the following table template, all fields of which are to be filled:

List of SUBCONTRACTORS for GOODS deliveries related to the WORK

<i>Item</i>	<i>SUBCONTRACTOR trading name, registered address, and Business Registration no.</i>	<i>GOODS to be delivered</i>	<i>Expected volume of subcontracting in CZK without VAT</i>
1.			
2.			
n.			

List of SUBCONTRACTORS for WORKS and SERVICES deliveries related to the WORK

<i>Item</i>	<i>SUBCONTRACTOR trading name, registered address, and Business Registration no.</i>	<i>WORKS / SERVICES to be delivered</i>	<i>Expected volume of subcontracting in CZK without VAT</i>
1.			
2.			
n.			

- b) The Purchaser / Contracting Authority recommends that **no more than 5 subcontractors** are proposed by the Participant / Contractor for each individual delivery of Goods, Works, and Services related to the Work.



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VOLUME C8
BANK GUARANTEES FOR THE WORK AND FOR THE DEPOSIT

1. **Volume C8 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 8 – Template Bank Guarantee for the WORK and for the Deposit**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. In preparing its **Indicative Tender**, the Participant / Contractor may propose minor changes to Supplement 8 to conform with bank requirements, provided that no such change materially impacts the Purchaser / Contracting Authority's rights or the Participant / Contractor's obligations.
3. The Participant / Contractor's proposed changes shall be **marked as revisions** (visible, in colour, in both the electronic and printed versions of the Indicative Tender, but without markup of formatting changes) or otherwise suitably highlighted relative to the existing text, so as to allow rapid lookup.
4. Instead of change proposals pursuant to Points 2 and 3 above, Participants may include in Supplement 8 the proposed bank's preferred forms specifying the Purchaser / Contracting Authority's rights and the Participant / Contractor's obligations, provided these conform with the bank guarantee templates provided in Supplement 8 of the Procurement Documents.
5. Any form proposals from the proposed bank or adjustments the Participant may make to Supplement 8 shall be discussed during the Indicative Tender Negotiations phase pursuant to Section 25 of Part 1 of the Procurement Documents. **In no event shall the Purchaser be bound to accept such Participant changes or bank forms.**



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VOLUME C9
PRICE SPECIFICATION

1. **Volume C9 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 9 – Price Specification**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. In preparing its Indicative Tender / Tender, the Participant / Contractor shall give its price specifications in the provided Tables 1 and 2 of Supplement 9 to Part 2 of the Procurement Documents.
3. The price specification (tables) shall be provided by the Participant / Contractor for all table fields, i.e.:

Table 1**Price Specification of the Work**

In this section, the Participant / Contractor shall provide:

- Prices, in CZK exclusive of VAT, for the individual items as listed; these ex-VAT CZK item prices shall correspond to the deliveries covered by that item. Furthermore, the item prices shall include all additional costs related to the execution of the Work in accordance with the Contract; e.g., transport of Goods to the Site, Site Facilities, Trial Operation, etc., attributed on the basis of the individual items' share on total price.
- Total Contract Price for the Work, in CZK exclusive of VAT.

Table 2**Specification of CONTRACTOR Activities**

from the date of Contract signing to Contract effective date as given in Section 56.2 of the Contract

Pursuant to Section 56.2 of the Contract, the Contract shall take effect on the day a Resolution of Grant of Support is received from the Czech Ministry of the Environment in relation to such a grant from the EU Cohesion Fund under the Operational Programme Environment, Priority Axis 2 (or on the day of the Purchaser's issue of a unilateral written declaration pursuant to Section 56.2.3 of the Contract), or on the effective date of the Resolution to Grant a Construction Permit, whichever occurs later.

Pursuant to Section 56.3 of the Contract, the Participant / Contractor shall specify prices for the activities it is required to take between the Contract's date of signing and effective date so as to remain on the timetable given for Provisional Acceptance of the Work in the Procurement Documents.



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VOLUME C10
ROADMAP OF KEY WORK MILESTONES AND PRICES

1. **Volume C10 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 10 – Roadmap of Key Work Milestones and Prices**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. In preparing its Indicative Tender / Tender, the Participant / Contractor shall specify its proposed timetable in the provided Tables 1 and 2 of Supplement 10 to Part 2 of the Procurement Documents, in accordance with the Purchaser's requirements given below:
 - a) The Participant / Contractor shall specify its timetable (advance payment schedule) in the form of the provided Table 1. The only field to be filled in is the Deposit amount, which shall be 15% of the proposed Contract Price for the Work, in CZK and in accordance with Section 13.1 of the Draft Contract for Work in Part 2 of the Procurement Documents.
 - b) The Participant / Contractor shall specify its timetable (CONTRACT PRICE part-payment schedule) in the form of the provided Table 2. All fields should be filled in, i.e., the individual 100% prices, in CZK exclusive of VAT, proposed for the completion of the milestone in question, while maintaining the required percentage share of the payment on total price.



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VOLUME C11
CONTRACTORS' CODE OF CONDUCT

1. **Volume C11 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 11 – Contractors' Code of Conduct** (being the text of the Purchaser's internal guideline SM-UE-1805 "United Energy, a.s. Contractor Rules of Conduct"), which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents in Czech only.
2. The Participant / Contractor shall further include in Volume C11 a statement confirming that he accepts the guideline SM-UE-1805 without reservation.



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VOLUME C12
CONTRACTOR'S TECHNICAL SPECIFICATIONS

1. **Volume C12 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 12 – CONTRACTOR's Technical Specifications**, which shall be drafted by the Participant / Contractor pursuant to the Procurement Documents, and shall in particular reflect all of the following Purchaser requirements:
2. Supplement 12 – CONTRACTOR's Technical Specifications must allow detailed understanding of the system's functions and an objective assessment of the technological quality of the Indicative Tender / Tender, as well as an assessment of the degree to which the requirements specified in Supplement 1 – PURCHASER's Technical Requirements on the WORK have been met.
3. The Contractor's Technical Specifications shall cover the entire scope of the Work, and shall contain detailed specifications for all deliveries of Goods, Works, and Services, including the quantities of individual components, and across all professional areas.
4. In terms of the technological and functional design and construction, provided that the technical requirements on the Work given in Part 3 of the Procurement documents – Technical Requirements are met, the Participant / Contractor shall have complete freedom to apply its best knowledge and engineering experience so as to offer to the Purchaser the best available techniques. Where, in Part 3 of the Procurement Documents (Supplement 1 – PURCHASER's Technical Requirements on the WORK), the Purchaser specifies a preference for a particular method of execution or type of equipment, the Participant / Contractor may use a different solution or method that is equivalent in terms of quality and technology. The Participant / Contractor should, as part of Supplement 12, provide its reasons for departing from Purchaser preferences; the Purchaser, however, shall not be required to accept them.
5. In the event that the Participant / Contractor's proposal as given in the **Indicative Tender** differs from the Purchaser's technical requirements as given in Part 3 of the Procurement Documents – Technical Requirements (Supplement 1 – PURCHASER's Technical Requirements on the WORK), or elsewhere in the Procurement Documents, the Participant / Contractor shall append to Volume C12 a **List of Departures from Procurement Documents Requirements**.
6. If required, the Participant / Contractor shall, at the end of this Volume C12 of the **Indicative Tender**, further append a list of any comments on the present Supplement (i.e., on the Purchaser's requirements concerning the preparation of the present Supplement).
7. Any Work departures from Procurement Documents requirements and comments the Participant / Contractor may make in the present Supplement shall be discussed during the Indicative Tender Negotiations phase pursuant to Section 25 of Part 1 of the Procurement Documents. **In no event shall the Purchaser be bound to accept such departures or comments, unless agreed otherwise during Indicative Tender Negotiations.**
8. If the Participant / Contractor has no comments, he shall provide a statement to that effect.
9. Supplement 12 – CONTRACTOR's Technical Specifications shall be drafted in the following way and shall contain in particular the following:

1. Introduction

a) Basic information on:

- Structure and contents of Contractor's Technical Specifications document, including information on any supplements and potential drawings contained therein
- Acronyms and abbreviations used

- b) Basic characteristics of the technical solution proposed for the Work, including the scope in which Purchaser's existing systems would be utilized and / or adapted

2. Scope of Delivery

- a) *Specification of principal physical deliveries (i.e., of Goods), including special and maintenance equipment, included in the proposed Work price, including identification data and quantities (bill of materials) for individual items, while respecting the requirements and information given below.*

The Specifications shall be organized by functional system and by structural system.

For the technology section, including the control systems and electrical technology, Specifications shall consist of a list of machinery and devices. For each machine or device, the minimum specifications required are:

- Item number*
- Name*
- Number of units (operating and backup)*
- Type*
- Manufacturer*

The same applies to structure fittings.

A separate list shall be provided of the existing Purchaser systems which the Contractor proposes to use, whether modified or not, as part of the Work, and which shall thereby become a part of the Work.

- b) *Specification of all Works and Services included in the Work price*

The specification of Works and Services shall include sufficient information and quantitative data on the services the Participant / Contractor proposes to render in his fulfillment of the requirements for the scope of the Work as given in Section 2.1 through 2.6 of Supplement 1 – Purchaser's Technical Requirements on the Work.

- c) *Specification of Rights of Use provided as part of the Work*

The specification of Rights of Use shall include sufficient information and quantitative data on the usage rights the Participant / Contractor proposes to provide to the Purchaser to fulfill the requirements for the scope of the Work as given in Section 2.7 of Supplement 1 – Purchaser's Technical Requirements for the Work.

3. Scope of Delivery

A precise delineation of the scope of the Work as proposed by the Participant / Contractor. The basic scope shall be based on that given in Section 3 of Supplement 1 – Purchaser's Technical Requirements for the Work, but shall further include the Participant / Contractor's proposed changes such as may be required to integrate certain existing Purchaser systems into the Work, to provide for necessary changes to existing structural or functional systems, or to meet the Contractor's obligation to provide a Work compatible with its existing surroundings.

4. Description and Documentation of the Technical Concept (Design) of the Work as a Whole

Including design drawings, schematics, and information documenting the technical concept (design) of the Work as a whole and its functional and dynamic properties,

particularly information on how the key project requirements and principles, as given in Part 3 of the Procurement Documents – Technical Requirements, are to be met. This shall particularly include:

- a) *Detailed description of the desulfurization process, including the machinery technology used, providing:*
- *Rationale for the choice of concept being proposed*
 - *Data on selected levels of reserves and redundancies in machinery and devices essential to the operability and reliability of the system as a whole, incl. manufacturer-quoted reliability data for individual machines*
 - *Technical schematics providing volumes of input chemicals, water, gas, and energy and output compounds and their composition (solids, flue gas, energy). Schematics must comply with the Purchaser's required performance criteria in all guaranteed parameters.*
 - *Technical schematics providing volumes of input chemicals, water, gas, and energy and output compounds and their composition (solids, flue gas, energy) for the maximum-power state of the boiler room (PS Max, with lime V1 and V2) and for boiler room Power State 4 (PS 4, with lime V1 and V2), for 75%, 50%, 25%, and 15% flue-gas levels.*
 - *All the technical schematics and balances (mass – flue gas – energy) shall be prepared and submitted always for two operating conditions defined as:*
 - *Operation with 0% production of the energo gypsum*
 - *Operation with 100% production of the dewatered energo gypsum in the quality according to chapter 5.3.1 of D3 – Supplement 01*
 - *intermittency/batch processing of the stabilize production and its formula according to the conditions of Supplement 1 – Purchaser's Technical Requirements on the Work. The Purchaser / Contracting Authority reserves the right to specify (amend specification of) the humidity and the composition of the mixture during the negotiation procedure depending on the ongoing research.*
 - *Statement of the limit (extreme) values of the limestone purity in relation to the flue gas composition and quantity, required for the quality of the produced dewatered energo gypsum to comply with chapter 5.3.1 D3 – Supplement 01.*
 - *P&I diagrams showing main regulation circuits, systems, balance and measurement devices, key pipe diameters, links to existing systems.*
- b) *Description of basic Work construction and spatial disposition, including general plan and overview sketches showing the spatial configuration and space demand of technological devices.*
- c) *Work links to existing systems – description, including connection points*
- d) *Description of changes and modifications proposed to existing systems and structural systems*
- e) *Concept for transition from existing desulfurization system – description of transition procedure incl. required temporary measures and timetable of the individual transition steps. In particular, the following must be clearly defined:*

- *Period of time from loss of operability of existing desulfurization system (if inoperability cannot be avoided to execute or connect the Work) to full operability of the Work*
- *Period of time of the full shutdown of the heating plant (boilers K6 through K10)*
- f) *Functional and structural systems making up the Work*
- g) *Work performance characteristics as a whole, incl. energy and media consumption (for guaranteed parameters, can be given by reference to Supplement 3 – Guaranteed Parameters). The characteristics shall be always stated for 0% production of energo gypsum and for 100% production of energo gypsum.*
- h) *List of waste products, including quantity and quality of media produced*
- i) *Data on process flexibility – system output regulation range and achievable dynamics of change*
- j) *Description of operation, staffing, and control procedures for the Work, incl. data on:*
 - *Numbers and expertise of required operations and maintenance staff for round-the-clock operation in 3 shifts, separately for each normal-operation shift*
 - *Operator interface points*
 - *Degree of automation*
 - *Necessary local manipulation (by operating mode)*
- k) *Description of power-up and power-down process, normal and emergency*
- l) *Description of measures to ensure operability in winter*
- m) *Measures taken to ensure required service life, incl. protection of interior and exterior surfaces from erosion and corrosion for all key machinery, devices, pipes, flues, tanks, magazines, etc.*

Further, which components would need replacement during expected service life, at which points in time, expected time and costs of such repair.
- n) *Description of maintenance procedures*

Including:

 - *Special repair and maintenance procedures*
 - *Recommended maintenance model (annual revisions, cycles, etc.) and proposed procedures in repair work*
 - *Any special devices and systems required for repair and maintenance that would be supplied with the Work*
- o) *Environmental care*
 - *Description of Work environmental impact*
- p) *Fire safety*
 - *Work technical design with regard to fire safety*
 - *Structural system fire safety characteristics*
- q) *Occupational Health and Safety*
 - *OHS characteristics of technology, control system, electrical systems*

- Sources of hazards to personnel health and safety
- Manner of risk mitigation to meet requirements
- Personnel and work environment protection from hazardous substances

5. Detailed Information, Descriptions, Calculations, and Drawings

Machinery and Related Equipment

Detailed information on machine technology and related equipment shall contain, in particular:

NOTE: May be provided by reference to the Questionnaires if the data required below is also included there.

- a) Basic data on key machinery and devices, e.g. nominal parameters and operational ranges, design characteristics and power curves, efficiencies and power consumption at nominal output and over operating range, cooling, other consumption, rpm, regulation type, drive specification, nominal drive output
- b) Materials (for the various parts), including CSN or other standards applied, for each device, pipe system, etc. For pipes and flues, also corrosion reserves, thickness, etc.

Also required are material quality tables, including material composition, their key properties, or their Czech equivalents.

Reasons for material selection shall be provided (by comparison of suitable alternatives) particularly for:

- Flue protection or lining materials
 - Absorber protection or lining materials
 - Unlined metals inside flues and absorbers
 - Flue liquid drainage system
 - Suspension pumps
 - Suspension pipes and armatures
- c) List of thermal insulation and protective paint used, presented in a concise table including scope, material, insulation thickness, etc.
 - d) Internal corrosion protection, wherever used.

Information shall be provided concerning use, reliability, and suitability of proposed corrosion protection solution, with reference to a system successfully in long-term operation, including identification of manufacturer and his experience. It is also necessary to provide information on need for repairs, including frequency, time requirements, and service lives.

- e) Operating fluid quantities and technical data.

6. Control System

Technical specifications for the control system shall contain, in particular:

- Drawings of complete control system configuration, denoting locations of key components and connections to existing control system
- Description of proposed control system configuration, including description and technical data for main components, field instrumentation

- *List of measurement points*
- *Description of linkages to existing Purchaser systems and electrical systems*
- *Layout of all systems*
- *Description of proposed field instrumentation and auxiliary devices*
- *Drawings and description of power supply*

7. Electrical Systems

Technical specifications for electrical systems shall contain, in particular:

- *Description of overall electrical system concept, including wiring and description of functional links to existing Purchaser systems*
- *Single-pole schematic of Work proper consumption, including power supply and control system power supply proposed*
- *Description of key system components (transformers, switchboards, protection elements, frequency modulators, accumulators, diesel generator, etc.)*
- *Frequency modulator dimension drawings*
- *Dimension drawings for other key system components*
- *List and description of all connection points to Purchaser systems*
- *Layout of electrical devices*
- *Overall design of grounding and electrocution protection*
- *List of electrical devices, including nominal output, voltage, load time coefficient, etc.*
- *List of electrical devices powered through frequency modulators, including engine power output and rpm adjustment range*
- *All other data that may be useful in assessing the technological properties of the electrical system.*

8. Structural Systems

Shall contain, in particular, descriptions, drawings, calculations, and other materials, organized by individual SO and IO, documenting the structural and technological design of structures, incl. details on:

- *Foundation and load-bearing frames*
- *Partition frames*
- *Wall lining – materials, type, thickness, composition*
- *Roof lining – materials, type, thickness, composition*
- *Windows – finish, materials, type, opening mechanism*
- *Doors and gates – finish, materials, type, opening mechanism*
- *Floors*
- *Ceilings*
- *Finishing*
- *Paint (specification of paint systems)*

- *Final adjustments*
- *Lifter frames – crane rails and grooves (maximum load), elevators (type, maximum load)*
- *Foundations and frames for technological devices.*

Further included shall be:

- *Layout plans of structural systems (floor plan, elevation plan, longitudinal and transversal sections)*
- *Construction site limits for individual SO and IO*
- *Specification and description of structure technological equipment (TZB) – healthcare technology, low-current and high-current construction equipment (incl. grounding and lightning rods), pressurized air systems, HVAC, incl. related I&C systems*
- *Any other data that may be relevant to the assessment of structural system properties*
- *Descriptions of individual engineering systems – technological and material solutions.*

9. Questionnaires

The Participant / Contractor shall fill in the Purchaser's questionnaires found below and submit them as a separate Addendum 1 to Supplement 12.

Note:

The data and information listed in the Questionnaires need not be repeated elsewhere in Supplement 12 – a reference to the Questionnaires will suffice.

10. List of Replacement and Rapid-Wear Parts

Pursuant to Section 35 of the Draft Contract for Work, the Participant shall submit, as a separate Addendum 2 to Supplement 12, the List of Replacement and Rapid-Wear Parts required for two years of post-warranty operation.

ADDENDUM 1 - QUESTIONNAIRES

Absorber

Number	pc	
Absorber type		
Diameter	mm	
Height	mm	
Magazine diameter	mm	
Magazine height	mm	
Number of shower tiers	pc	
L/G ratio		
Liquid vol./tier	m ³ /h	
pH of absorber liquid		
Sump material		
Entry zone material		
Shower section material		
No. of stirring blades		
Stirring blade material		
Absorber weight	kg	
Insulation		
Bottom incline	%	

Drop separator

Type	-	
Manufacturer	-	
No. of tiers	pc	
Material	-	
Rinse water consumption (nominal)	l/h	

Boost ventilator

Type	-	
Manufacturer	-	
Flue-gas throughput – nominal	Nm ³ /h	
Flue-gas operating temperature – nominal	°C	
Flue-gas throughput – actual	m ³ /h	
Nominal input overpressure	mbar	



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Rotation speed	1/min	
Ventilator efficiency	%	
Input power, total	kW	
Stator blade tilting regulation	Yes / No	
Rotor blade tilting regulation	Yes / No	

Particulate filter

Type		
Manufacturer		
Design flue-gas temperature at filter input	°C	
Design flue-gas volume	Nm ³ /h	
Number of filtering chambers	ks	
Total filtering area	m ²	
Design filter throughput	m ³ /m ² *min	
Mean pressurized air consumption of regeneration	m ³ / h	
Filter hose – material		
Mean time to hose replacement	h	
Maximum overload temperature and time	°C/min	

Smoke flues

Raw gas flue

Material		
Diameter	mm	
Insulation		

Scrubbed gas flue

Material		
Diameter	mm	
Interior protective finish		

Flue closing armatures

Type		
Number	pc	
Drive		

Pumps (TBA by Participant for each pump type)

Type	-	
Manufacturer	-	
Number	pc	
Water / suspension output	m ³ / h// kg/ h suspension	
Water discharge head	m	
Suspension discharge head	m	
Rotation speed	1/min	
Drive power consumption	kW	
Pump material	-	
Impeller material	-	
Plug type	-	
Plug material	-	

Blowers and compressors (TBA by Participant for each type)

Type	-	
Manufacturer	-	
Number	pc	
Output	m ³ / h	
Input overpressure	bar	
Rotation speed	1/min	
Drive power consumption	kW	

Stirrers (TBA by Participant for each type)

Type	-	
Manufacturer	-	
Stirrer material	-	
Throughput	m ³ / h	

Elevator

Maximum load	kg	
Number of stops		

Lifters (TBA by Participant for each lifter type)

Maximum load	kg	



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Drive		

DCS

Manufacturer	-	
Type	-	
Galvanic isolation of individual AI card inputs	ano / ne	
Input optocouplers at individual BI card inputs	ano / ne	
Time resolution of BI card inputs	ms	
Time resolution of event sequences (incl. internal system events such as e.g. limits of analog signals, operator input, etc.)	ms	

PLCs

Auxiliary PLCs used	ano / ne	
PLC manufacturer / type	-/-	
PLC purpose	-	

6 / 0.4 kV transformers

Manufacturer	-	
Output	kVA	
Short-circuit voltage Uk	%	
Output voltage range (branches)	V	
Nominal current	A	
Ingress protection	IP	
Cooling	-	

6 kV substations

Manufacturer	-	
Number of fields	-	
Nominal voltage	V	
Short-circuit resistance (incl. equipment)	kA	
Ingress protection	IP	
Dimensions (W x D x H)	mm	

0.4 kV switchboards

Manufacturer	-	
Number of fields	-	
Nominal voltage	V	
Short-circuit resistance (incl. equipment)	kA	
Ingress protection	IP	
Dimensions (W x D x H)	mm	
Manufacturer		

Frequency converters (over 40kW) – list separately for each FC

Manufacturer	-	
Type	-	
Output	kW	
Nominal input voltage	V AC	
Output voltage range	V AC	
Nominal efficiency	%	
Ambient temperature	°C	
Ingress protection	IP	
Output dU/dt filter	YES / NO	
Communications card	YES / NO	

Diesel generator

Manufacturer		
Nominal output	-	
Fuel economy at nominal output	l/h	



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VOLUME C13

INFORMATION ON PROCESSING OF PERSONAL DATA OBTAINED
FROM DATA SUBJECT AND FROM OTHER SOURCES

1. **Volume C13 of the Indicative Tender / Tender** shall contain the Participant's draft **Supplement 13 – Information on processing of personal data obtained from data subject and from other sources**, which has been drafted by the Purchaser and is included in Part 2 of the Procurement Documents.
2. In preparing its Indicative Tender / Tender, the Participant / Contractor shall only fill in the name of the company (of the Participant) in paragraphs 1 C), 2 A) and 2 E).
3. The Participant / Contractor shall further include in Volume C13 a statement confirming that he accepts this Supplement 13 containing Information on processing of personal data obtained from data subject and from other sources without reservation.