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Prepared by: Hammerlindl Pavel (Chief Maintenance Engineer)	<b>Rules for Welding Quality Control and Inspection</b>	Guarantor: Boháček Milan (Director General)
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In order to create optimal conditions for achieving the best available level of protection, safety, economy and proficiency in the use, maintenance, restoration and improvement of the technical condition and function of the assets owned, United Energy, Inc. (hereinafter referred to as the “Employer”) lays down by this directive the following:

## **RULES FOR WELDING QUALITY CONTROL AND INSPECTION**

(hereinafter referred to as the "Rules").

### **Article 1 Scope of Regulation**

- 1.1 For the purposes of the Rules, welding means the use of various fusion, pressure and combination welding methods, including related methods such as soldering or flame cutting, to form permanent, non-rewirable joints between two or more components made of materials of identical, similar or completely different properties, or the thermal separation of materials, including the use of welding technologies.

### **Article 2 Basic Principles and Binding Nature of the Application of the Rules**

- 2.1 The rules shall apply whenever:
- (a) Welding mainly affects such tangible fixed assets kept in the employer’s accounting records and newly acquired assets that are or will be crucial to the employer's business in terms of functionality, costs, safety or otherwise. As a rule (but not exclusively) these are technological sets or individual technological, technical equipment or buildings used in connection with the production and distribution of electricity and heat.
  - (b) It is not a property under (a) but the welding poses a threat to the safety of persons or property or to the environment of a higher level than is acceptable without special measures (e.g. difficult working or operating conditions, etc.).
- 2.2 The application of the Rules shall be ensured by everyone who provides or performs welding for the employer in the cases referred to in paragraph 2.1 (e.g. persons appointed to be responsible for the use of the property affected by welding, persons carrying out the preparation and execution of contracts for works that include welding, etc.).
- 2.3 The rules are without prejudice to the obligation to always apply the currently valid generally binding legal regulations, technical regulations, requirements of the state professional supervision bodies and internal

regulations of the employer concerning the performance of welding or handling of technologies intended for welding or ensuring safety and protection of life and health of persons, fire protection, safety and protection of property and the environment during welding (hereinafter referred to as "Standards").

An informative overview of the Standards used and valid as of the indicated date of revision is given in Annex 6. This informative overview is without prejudice to the obligation to always use the current Standards.

### **Article 3 Final Provisions**

3.1 Responsibility for the application of the Rules and the control of their compliance by the contractor lies with the holder of the relevant work contract. This applies even if some of the activities specified in the Rules are carried out by subcontractors. The holder of the relevant work contract is in any case obliged to ensure that the inspection supervision of the Customer is carried out by a suitably qualified person.

3.2 Responsibility for the factual correctness of the Rules falls within the competence of the Chief Maintenance Engineer. The appointed manager is obliged to ensure the correctness of the Rules also in those areas of regulation that fall within the professional competence of other organisational units of the employer (duty of cooperation).

3.3 Inspection of compliance with the Rules by persons who provide or perform welding for the employer is carried out by the Customer's inspection supervisor, the Customer's safety engineer, the Customer's technical supervisor or another person authorised by the Customer.

#### 3.5 Annexes

Annex 1 Minimum Requirements for the Content of the Request for Proposal

Annex 2 Minimum Requirements for the Content of the Tender

Annex 3 Pre-implementation Requirements

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Annex 6 Informative Overview of the Standards

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**Ing. Milan Boháček**  
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# BASIC TERMS AND ABBREVIATIONS

## 1.1. BASIC TERMS

### 1.1.1. Welding, Thermal Separation of Materials

**Welding** – a comprehensive term for a special process resulting in a non-rewirable joint (weld) of metallic or non-metallic materials, formed by remelting, plastic deformation or other bonding action, or a combination thereof, including in particular fusion welding and metal welding, welding of plastics, soldering or spraying of functional surfaces, carried out manually or by mechanised means, with or without the use of additional material.

The principle of the welding process is to create such thermodynamic conditions that allow the materials to be joined at the level of interatomic bonds. Since it is practically very difficult to achieve a connection at the level of interatomic bonds under ambient conditions (normal temperature, pressure), when the thermodynamic state of materials is stable or metastable, it is necessary to change this thermodynamic state. Such changes in the state of materials are caused by the action of externally supplied energy, e.g. (depending on the applied force) in the form of heat, electricity, pressure, radiation, etc., or a combination of several forms of energy. Depending on the welding method used, many different changes occur in the material being joined (dissolution, diffusion, deformation, recrystallisation, etc.), which always lead to a change in its physical or mechanical properties. In general, for example, the higher the pressure, the less heat is needed and vice versa. Pressure welding is the designation of welding under the action of pressure and fusion welding under the action of heat.

**Thermal Separation of Materials** - can be classified as a material preparation operation. By this term we mean cutting technology working on the principles of local melting, combustion or evaporation, or a combination of these phenomena, where the energy required to initiate the process and its progress is supplied by various heat sources. In general, thermal separation can be applied to metallic and non-metallic materials. In industrial practice, three basic methods of thermal separation (cutting) are used: oxygen, plasma and laser.

**Basic Material** [ZM] - material of welded parts (components). Metallic and non-metallic materials, materials of similar and different properties can be welded. Different welding methods are suitable for different types of joints and materials.

**Additive Materials** [PM] - a general designation of materials consumed during weld production; they include e.g. material filling the gap between the basic material (forming the joint) during welding, fluxes, protective atmospheres, etc.

**Welder** - an authorised person carrying out welding or thermal separation of materials. The welder must always be demonstrably professionally qualified according to the relevant Standards to carry out the work by the particular method used.

**Welding Workplace** - a work area defined for welding and thermal separation, including technological equipment used for welding and thermal separation; technological stations and handling areas where welding-related operations are performed are also considered as welding workplaces.

### 1.1.2. Relationships, Participants in Relationships

**Employer** - United Energy, a.s. in an employment relationship with its own employees.

**Customer** [OBJ] - United Energy, a.s. in a contractual relationship with the contractor of the work (welding), or, depending on the context, also an authorized person of the customer.

**Contractor** [ZHO] - an organisation in a contractual relationship with the customer carrying out the production, assembly, reconstruction and repair of welded structures, pressure equipment, or other dedicated equipment or specified products, or, depending on the context, also the contractor's authorised person.

**Authorised Person** - a person authorised by the customer or the contractor to carry out a specific activity, who has defined duties, responsibilities and powers and has relevant knowledge and experience. This group includes e.g. IDO, ZIDO, TDO, SDZ, as well as other specially authorised persons with other professional competences.

**Customer's Inspection Supervisor** [IDO] - a person authorized by the customer with defined responsibilities and powers to ensure activities according to the Standards. Inspection supervision shall meet the requirements for qualification of senior welding personnel for welding inspection (min. EWI-E qualification) and for sufficient experience.

**Customer's Inspection Supervisor Representative** [ZIDO] - Customer's employees authorized to represent the IDO. The representative of the inspection supervision shall meet at least the qualification according to VT2 standard for direct visual testing of welded joints. The ZIDO list is given in Annex 7. These authorised persons carry out inspection in the boiler room, engine room, construction, electrical systems, M&C and I&C.

**Customer's Technical Supervisor** [TSO] - Belongs to the group of authorized persons of the Customer. This can be the administrator of the technology, a technician, or another person who has the appropriate knowledge and experience in the field. He/she has defined duties, responsibilities and powers.

**Contractor's Welding Supervisor** [WWS] - A person designated by the Contractor with specified responsibilities and authority to ensure activities in accordance with the Standards. Welding supervisors shall meet the qualification requirements for senior welding personnel as specified in the Standards.

**Recognised Independent Organisation** - an organisation whose participation in the execution of the work results from legal regulations or has been contractually agreed.

### 1.1.3. Documents

**Standards** - on the date of welding, the applicable generally binding legal regulations, technical regulations, requirements of the state professional supervision authorities or internal regulations of the employer/customer concerning the performance of welding or handling of technologies intended for welding or ensuring safety and protection of life and health of persons, fire protection, safety and protection of property and the environment during welding.

**Product Standards** - technical standards that are agreed by the Customer and the Contractor as a minimum standard for meeting the quality requirements of the work.

**Contractor's or Customer's Organisation Chart** - is a named schematic representation of the responsibilities, subordination and superiority of persons, including their telephone and email contacts, created for the purpose of communication leading to the successful completion of the work.

**Documentation Cover Sheet** - The documentation cover sheet is the top sheet that completes a complete documentation delivery, e.g. called drawings, welding documentation, sent to the customer for approval.

**Partial Cover Sheet** - is a separating sheet that separates the smallest part of the documentation that is no longer divisible. The partial cover sheet "Welding Documentation" may, for example, contain partial cover sheets of documentation for documents called WPS, WPQR, Inspection and Test Plan, Welding Plan, Weld Staging, etc.

**Welder's Registration Card** - a written output document from a positive validation of the welder's professional competence to use a particular welding method according to the Standards.

**Inspection Report** - a written record of the validation performed, documenting the status and possible fulfilment or non-fulfilment of the individual stages of the implementation of the work.

**Project Documentation** - a part of the technical document that contains all necessary data and technical requirements that are required to ensure the complexity of the proposed solution related to welding, heat treatment and weld inspection (e.g. drawings, material summaries, requirements for additional materials, heat treatment, NDT of welds, evaluation criteria, etc.).

**Drawing Documentation** - technical documentation that specifies in more detail than the project documentation the construction and material design related to the welding, heat treatment and weld inspection.

**Quality Plan** [QP] - The Contractor's external document, with details as required by the Standards, specifying which processes, procedures, and related resources will be used to meet the Customer's requirements for a specific project, product, process, or contract, who will use them, and when they will be used.

**Inspection and Testing Plan** [ITP] - a document related to the Quality Plan or prepared as a separate document containing specific inspection operations and tests that must be performed and documented to demonstrate that the implementation of the work or change has achieved the required objective.

**Inspection and Testing Record** [ITR] - a document related to the Quality Plan and Inspection and Testing Plan that demonstrates compliance with all quality requirements defined in the Quality Plan and Inspection and Testing Plan.

**Welding Procedure Specification** [WPS] - A document according to the Standards that defines the individual variables (e. g. welding current and voltage, wire feed rate, protective gas flow, etc.) for a given welding method, material, weld type, etc. to ensure repeatability. The WPS used in production are to be supported by the welding procedure qualification document WPQR.

**Welding Procedure Qualification** [WPQR] - a document according to the Standards, issued by a certified body on the basis of the preliminary WPS and on the basis of the results of destructive tests of the welded joint.

### 1.1.4. Other Terms

**Customer's Equipment** - tangible fixed assets kept in the Customer's accounting records and newly acquired assets that are or will be crucial to the Customer's business in terms of functionality, costs, safety or otherwise. As a rule (but not exclusively) these are technological sets or individual technological, technical equipment or buildings used in connection with the production and distribution of electricity and heat.

**Dedicated Technical Equipment** [DTEZ] - technical equipment, the use of which is subject to specific Standards.

**Validation** - Confirmation by providing objective evidence that the requirements for a specific intended use or application have been met.

## 1.2. ABBREVIATIONS, SYMBOLS USED

<i>abbreviation, mark</i>	<i>meaning</i>
CWS ANB	Czech Welding Society - Authorized National Body
DT	destructive testing
EWI-E	welding inspector qualifications
IDO	inspection supervision of the Customer
ZIDO	representative of the Customer's inspection supervision
NDT	non-destructive testing
OBJ	the Customer, or a person authorised by the Customer to carry out certain defined activities
OTK	Technical Inspection Department
PKZ	inspection and testing plan
PLK	quality plan
PM	additional materials
SDZ	welding supervision of the contractor
TDO	technical supervision of the Customer
VTEZ	dedicated technical equipment
WPQR	welding procedure qualification
WPS	welding procedure specification
ZHO	the Contractor, or a person authorised by the Contractor to carry out certain specified activities
ZKZ	record of inspections and tests
ZM	basic material
PT	capillary method of material testing - non-destructive test
UT	ultrasonic method of material testing - non-destructive test
VT	visual method of material testing - non-destructive test
MT	magnetic material testing method - non-destructive test
RT	radiographic (X-ray) method of material testing - non-destructive test

## **2. REQUIREMENTS FOR THE DELIVERY OF WELDING ACTIVITIES**

Welding is a special process that is subject to validation. Therefore, in order to provide objective evidence that the requirements for non-separable joints made by welding technology have been met, the Contractor's employees and those of its subcontractors, if any, shall work with the Customer's employees to validate all processes necessary for the execution and completion of the Work.

### **2.1. REQUIREMENTS FOR THE CUSTOMER**

#### **2.1.1. Specification of Welding Documents for the Tender**

For contracts for welding or welding-related activities, the Customer is always obliged to include in the proposal the requirements specified in Annex 1 - Minimum Requirements for the Proposal.

#### **2.1.2. Requirements for the Customer's Inspection Supervision When Evaluating Tenders**

For contracts for welding or welding-related activities, in disputed cases, the IDO is required to review, evaluate, and make written recommendations on the delivered technical part of the tender. In addition, he is obliged to point out the fundamental non-fulfilment of the tender and clarify the feasibility of fulfilling the requirements of the Contractor - Customer with regard to the date of execution and completion of the work. Required documentation: Inspection report, pdf format.

### **2.2. REQUIREMENTS FOR THE CONTRACTOR**

#### **2.2.1. Specification of Welding Documents for the Tender**

For contracts for welding or welding-related activities, the ZHO is always obliged to include in the tender the requirements specified in Annex 2 - Minimum Requirements for the Content of the Tender.

#### **2.2.2. Requirements for the Contractor before Commencement of the Work**

In accordance with the Contract, the ZHO is obliged to submit complete welding documentation for approval by the Customer's authorised person before commencing the welding work and to provide evidence of the personnel and qualifications provided for the work, including the delivery of an organisational chart with mobile contacts and email addresses of the Contractor's execution team. Submission of all documentation must be ensured in time so that any failure to approve it does not affect the final delivery date of the work. An overview of the requirements is given in Annex 3 - Pre-implementation Requirements. Required documentation: Documentation cover sheet and partial cover sheets, pdf format.

#### **2.2.3. Competence Certification for Contractor and Subcontractors**

The ZHO shall provide the relevant certificate of competence for welding. Required documentation: Partial cover sheet and document, pdf format.

#### **2.2.4. Quality Plan**

The Quality Plan shall, as a minimum, include what Product Standards, processes and procedures will be used to meet the Customer's requirements at the time of execution, including clearly defined performance criteria. The quality plan must be developed so that the different processes are linked to each other as they will be practically executed. The Quality Plan must define who will provide them, but also who will be responsible for their accuracy on behalf of the ZHO. The Quality Plan will also require, for individual processes, in agreement with the Customer or his/her authorised person, verification of fulfilment by means of information of fulfilment, submission of a record of fulfilment or invitation to participate in the inspection or verification of status.

Required documentation: Partial cover sheet and document, pdf format.



### **2.2.5. Welding Supervision of the Contractor**

The ZHO shall document the appointment of his welding supervisor for the event including his qualifications. The same applies to his representative, if required by the scope of the Contract.  
Required documentation: Partial cover sheet and document, pdf format.

### **2.2.6. Contractor's Welders**

The ZHO shall provide a list of names of welders including their qualifications, certificates. The Customer prefers trained and certified welders within the CWS ANB system. The name list of welders must contain at least the following information:

- surname and name of the welder
- welding qualification
- validity of the qualification until
- welder's identification number

(see certificate, section 6. permit)

- punch

(internal welder's identification mark)

Required documentation: Partial cover sheet and document, pdf format.

### **2.2.7. Welding Documentation**

The ZHO shall provide draft welding documentation in the form of the relevant WPS and WPQR.  
Required documentation: Partial cover sheet and document, pdf format.

### **2.2.8. Inspection and Testing Plan**

The ZHO shall submit a draft PKZ. It must be clear from the delivered PKZ which Product Standards and to what extent must be applied for successful validation of the subject of the work. The inspection and testing plan must clearly specify for each type of inspection according to which implementing standard the inspection is to be performed and according to which standard it is to be evaluated, including the determination of the admissibility criteria.

Required documentation: Partial cover sheet and document, pdf format.

### **2.2.9. Persons in Charge of NDT**

The ZHO shall provide a list of the persons considered to be responsible for carrying out the non-destructive tests, including evidence of their qualifications.

Required documentation: Partial cover sheet and document, pdf format.

### **2.2.10. OTK Staff**

The ZHO shall provide an overview of the persons considered to be in charge of the technical inspection, including evidence of their qualifications.

Required documentation: Partial cover sheet and document, pdf format, including qualifications in pdf format.

## **2.3. REQUIREMENTS FOR THE CONTRACTOR DURING THE EXECUTION OF THE WORK**

### **2.3.1. Approval of Partial Outputs**

In accordance with the Agreement, the ZHO is obliged to continuously submit its partial outputs to the Customer's authorised person for approval during all welding and welding-related activities so that their possible non-approval does not affect the final delivery date of the work. An overview of the requirements is given in Annex 4 - Requirements During Realization.

Required documentation: Documentation cover sheet and partial cover sheets, pdf format.

### **2.3.2. Proof of Professional Competence of Welders Performing Welding**

The ZHO is obliged to prove at any time upon request to persons authorised by the Customer (e.g. IDO, ZIDO, TDO, persons responsible for the use of the property concerned by the welding, etc.) that the welder actually performing the welding has the appropriate qualification to perform the work by the specific method used in accordance with the relevant Standards.

### **2.3.3. Interruption of the Realization of the Work**

In the event of non-compliance with the conditions described above, in particular non-compliance with technological procedures or breaches of safety regulations, the Customer's authorised persons (e.g. persons responsible for the use of the property concerned, persons responsible for checking compliance with the agreed Standards, etc.) are entitled to suspend the work and demand remedial action.

## **2.4. REQUIREMENTS AFTER COMPLETION OF THE WORK**

### **2.4.1. Completion of Realization- Contractor**

In accordance with the Agreement, the ZHO is obliged to provide final documentation proving the quality of the work after completion of the welding work and welding-related activities. Documents must be ordered as the individual processes have been identified in the Inspection Plan. It is appropriate to number the processes in the Inspection Plan with sequential numbers as the fulfillment of the final status will be documented. An overview is provided in Annex 5 - Post Realization Requirements.

Required documentation: Documentation cover sheet and partial cover sheets, pdf format.

## **3. MINIMUM REQUIREMENTS FOR ENSURING SAFETY IN WELDING AND THERMAL SEPARATION OF MATERIALS**

### **3.1. COMMON PROVISIONS**

#### **3.1.1. Welding Workplaces**

- (1) Welding workplaces intended for welding pursuant to the construction project documentation are considered permanent welding workplaces; others are considered temporary welding workplaces.
- (2) Welding workplaces shall be secured in such a way as to prevent in particular:
  - a) the occurrence of a fire or explosion with subsequent fire and the spread of fire,
  - b) the creation of obstacles that make it difficult or impossible for persons to escape,
  - c) threats to the lives and health of persons from basic and specific risks.

These requirements also apply to adjacent premises.

- (3) Persons in the vicinity of welding and cutting shall be protected from the harmful effects of these processes.
- (4) If more than one person is involved in the welding, the method of communication shall be determined in advance.
- (5) Hazardous substances must not be present in the welding area in quantities that adversely affect safety at work.
- (6) In enclosed, unventilated spaces, gas generators or cylinders containing flammable gases or oxygen must not be placed during the work.
- (7) Parts of the equipment and materials are distributed at the welding workplace so that the possibility of free passage is maintained without creating cramped and collision points. Welding system shall be secured in such a way as to prevent their movement or the movement of their parts, and thus their damage, which would lead to the occurrence or spread of fire or explosion with subsequent fire, possibly making the conditions for escape of persons more difficult.

- (8) The welded material is stored at the workplace in such a way as to prevent its movement or movement of its parts, which could damage the welding equipment, especially damage to moving wires and electrical parts of the welding equipment, gas distribution, hoses, damage of which could lead to fire or its spread or to an explosion with subsequent fire.
- (9) Transitional welding workplaces shall be equipped with suitable fire extinguishers and other extinguishing means in accordance with special legislation. In addition to these fire extinguishers, at least two portable fire extinguishers with a suitable charge shall be added, one of which should be a portable powder fire extinguisher with extinguishing agent weighing at least 5 kg. In the case of welding in an apartment, with regard to the type of welding, provided that the other premises of the building are not immediately endangered, the minimum equipment is one portable powder extinguisher with extinguishing agent weighing at least 5 kg.
- (10) Flammable and combustible substances cannot be stored in permanent welding workplaces unless they are part of the technology. In the event that such substances are necessary in the technology, fire safety measures shall be established to prevent the possibility of fire or explosion with subsequent fire and to ensure the escape and evacuation of persons.
- (11) Orders and prohibitions or other important information shall be marked with safety signs at the welding workplace and on the equipment. Warning and information signs indicating the type of gas and the quantity of cylinders shall also be placed at the entrance to the premises where they are located.
- (12) When welding in areas from 2 m height, above the places that need to be protected from the effects of these works, protection zones shall be determined from the point of view of fire protection of the workplace. These zones shall specify the minimum distances from which combustible materials shall be removed or safely isolated before welding commences, or other effective measures shall be taken, in particular against the effects of hot particles. The protection zones are determined individually in terms of fire protection with regard to the technology and welding method used, so that the centre of the protection zone is always below the welding site and a circle with a radius of 10 m in the horizontal plane is determined as a minimum. When welding at heights exceeding 2 m, the protection zone is extended by at least 0.3 m for each additional 1 m of height up to a height of 7 m; for each additional 1 m of height, the protection zone is extended by 0.1 m up to a height of 20 m. These increments shall be added to the radius. The protection zones for welding at heights exceeding 20 m shall be determined individually. In the application of technologies using compressed gases (e.g. oxygen cutting) and in the case of co-induced air currents for air velocities exceeding 1 m/sec, the protection distance is extended to a distance of up to 20 m within the area defined by the ellipse, according to the individual fire risk assessment.
- (13) Permanent welding workplaces shall be clearly marked in a distinctive manner with the demarcation of
- a) the fire safety distance, if specified in the installation documentation; or
  - b) the protection zone.
- (14) The electric current conductors and hoses distributing gas to the welding equipment shall be routed and stored in such a way as to avoid damage by sharp bends, material, grease, chemicals, effects of the welding process, etc. In the event of danger of mechanical damage, the equipment shall be protected by rigid covers.
- (15) For hydraulically driven welding machines using flammable working fluids, the points of possible leakage of flammable fluids shall be protected by covers in a similar way to the presence of flammable substances.
- (16) Welding on machinery and equipment in an area in which a hazardous concentration may arise may be carried out only on machinery and equipment which cannot be removed from the area. It is necessary to remove combustible dusts from the area, machinery and equipment, to prevent the escape of dusts into the area, machinery and equipment and to measure the concentration of explosive dusts in the air before and during welding.
- (17) Welding may only be carried out on machines and equipment that are blocked against unwanted start-up.
- (18) The substitution of oxygen for fresh air supply is not permitted.
- (19) Welding gas cylinders or acetylene gas generators and sources of electrical power for welding operations shall not be located in areas where flammable gases, vapours or dusts may be present. Whenever the premises are left, the burners and the welding gas supply hoses shall be removed from the premises.

(20) Vessels, pipes and equipment which cannot be reliably determined whether their contents are not a fire hazard shall be treated as if they were.

(21) Where there is a danger of welding wires or hoses being pulled off, they shall be secured to a fixed structure or other suitable fixed equipment.

### 3.1.2. Conditions for Starting Welding

- (1) Welding shall not be commenced or continued, in particular if:
  - a) fire safety precautions are not specified with regard to the type and location of the work,
  - b) the welder and personnel involved in welding and related activities are not provably familiar with fire safety conditions,
  - c) the fire safety conditions are not met,
  - d) a welder at a welding workplace cannot prove his competence to weld,
  - e) any part of the welding equipment is damaged,
  - f) the material to be welded is contaminated with oil, lead paint, degreasing residues or similar pollutants.
- (2) Before welding begins:
  - a) identify and evaluate potential fire hazards in relation to the type of welding, the condition of the welding workplace and adjacent areas, the equipment and materials used and respond to them in fire safety measures,
  - b) define the authorisations and duties of persons to ensure fire safety at the start of welding, during welding, during interruption of welding and after its completion,
  - c) specify the requirements for participants in welding operations requiring special fire safety precautions and for persons carrying out fire supervision, including the intervals for carrying out such supervision during and after interruption of welding operations, unless the fire supervision is continuous,
  - d) establish requirements for the safe stay and movement of persons, including prohibitions,
  - e) provide clear escape routes, including access to them,
  - f) determine the operating conditions of the technical equipment and the technological process, including the conditions of any equipment shut-downs or operating restrictions,
  - g) determine other measures with regard to the type of activity or the specific risk of the welding workplace.
- (3) If an operational accident could occur or if there is a risk of poisoning or suffocation during welding, cutting or soldering work, professional supervision of the work must be provided and special safety precautions must be taken and must be specified in the written welding permit (the provision of precautions must be demonstrated in writing).

The identification of workplaces for activities that explicitly require special safety measures in the employer's local conditions, including the specification of these measures, is regulated by another special internal regulation on Workplace Safety for activities with increased fire and explosion hazards.
- (4) Before welding commences, the fire safety conditions in the areas to be welded and in adjacent areas shall be evaluated to determine whether welding requires special fire safety measures. The fire hazard posed by combustible substances contained in building structures (e.g. walls, ceilings, partitions) is also assessed.
- (5) If fire safety conditions change during the welding process, the welding may only be resumed after a new evaluation and provision of appropriate basic or special fire safety measures.
- (6) Where welding requiring special fire safety measures is carried out repeatedly and in welding workplaces which are structurally similar and for which these fire safety measures can be determined uniformly, this may be done within the relevant work or process procedure.
- (7) At least two persons, including the welder, must be present during welding operations requiring special fire safety measures. The workplace can only be occupied by one person if it is a welding operation where the welder is able to perform all the tasks associated with the actual welding and fire safety measures himself.
- (8) When determining special fire safety measures, the fire safety of technical equipment and technological processes which are not part of the welding technology and which occur at the welding workplace as well as in adjacent areas shall also be taken into account.

(9) Basic fire safety measures and, depending on the specific hazard, special fire safety measures shall be taken against the occurrence and spread of fire or explosion with subsequent fire in welding workplaces and adjacent areas. Depending on the operating conditions, this may consist of one or more measures consisting in particular of:

- a) removal of flammable or combustible or explosive substances,
- b) covering or sealing combustible substances with non-combustible or non-flammable material isolating the combustible substance from the source of ignition so as to prevent ignition. In arc welding, material complying with the requirements of the standard values may be used for curtains, strips or screens in a manner and at a distance which safely protects against hot particles from welding operations as specified by the manufacturer or importer; the overlapping shall be done in such a way as to prevent flammable substances from soaking into the covering material,
- c) modification of the impact area or coverage of the path of direct and reflected laser radiation from lasers of a specified class,
- d) equipment with extinguishing means according to the nature of the workplace and the welding technology used,
- e) measuring the concentration of flammable gases, flammable liquid vapours and dusts in a mixture with air or other oxidising agent and maintaining the concentration below the hazardous concentration limit,
- f) cooling of the structure,
- g) ventilation of the workplace to remove dangerous concentrations of flammable gases, vapours, dusts,
- h) the positioning of technical equipment against splashing of hot particles in such a way as to reliably prevent the action of sparks, metal particles and slag.

(10) During welding, it is necessary to avoid such heating of welded and other materials, which would lead to a loss of tightness or integrity of the equipment, resulting then in leakage of flammable or combustion-promoting substances.

(11) The covering and sealing of the combustible material shall be done in such a way that no unprotected openings are left between the individual parts of the material used allowing the passage of combustible particles, flame or heat transfer.

(12) The welder may only give the instruction to switch on the welding source or circuit when all conditions are met, the welder is ready to start his work and has taken up the working position!

### **3.1.3. Conditions After Welding**

(1) After the completion of welding operations requiring special fire safety measures, the fire safety of the welding workplace and adjacent areas shall be checked as part of fire supervision and fire supervision shall be provided at specified intervals. The intervals shall be determined taking into account the basic or specific risk of the welding workplace. The shortest fire supervision time is 8 hours. In justified cases, particularly in the case of thermal separation of metals and in the case of structured spaces, the possibility of fire occurring after 8 hours must be taken into account when determining the time for which fire monitoring is to be carried out.

(2) Fire supervision shall be carried out by a person designated in advance with written rights and duties during this supervision. Fire supervision is carried out continuously during the welding process. When welding is interrupted or after its completion, fire supervision shall be carried out continuously for a specified period of time or, due to the nature of the work and the area, at intervals specified by special fire safety measures.

## **3.2. WELDING METHODS**

Different safety precautions and handling instructions apply when using different welding methods. The following is only a brief description of the most common methods used at United Energy, Inc. If other methods are used, the current standards of the method shall apply.

### 3.2.1. Welding and Flame Cutting

The main gases used in flame welding are oxygen, air, acetylene, hydrogen, liquefied hydrocarbon gas, which is usually propane, butane or a mixture of these gases (hereinafter referred to as "propane-butane"), natural gas and artificial gas mixture.

- (1) After transport to the workplace in closed vehicles, the cylinders shall be unloaded before the welding. In mobile workshops or mobile laboratories, cylinders may remain in place for the duration of the welding process, provided that
  - a) there are no more than 2 cylinders in the vehicle from which gas is drawn and 2 storage cylinders,
  - b) they are located at the entrance to the storage compartment of the vehicle,
  - c) are individually secured by a device which can be easily released,
  - d) no work shall be carried out in the vehicle compartment while the gas is being withdrawn,
  - e) there shall be a non-sealable vent of at least 0,01m<sup>2</sup> at the floor of the cylinder compartment and another vent of at least 0,01m<sup>2</sup> in or just below the roof part of the vehicle,
  - f) the vehicle body does not contain substances or materials which are prone to spontaneous combustion,
  - g) no flammable substances or materials are stored in the vehicle body together with the source of ignition,
  - h) the vehicle shall be equipped with at least one portable powder fire extinguisher with an extinguishing agent weighing at least 5 kg, positioned so as to be accessible from the outside.
- (2) Cylinders intended for welding work shall not be stored in a welding workplace in an area where there is a risk of fire or explosion with subsequent fire.
- (3) Pressure cylinders for welding cannot be placed in the working pit.
- (4) A pressure cylinder containing flammable gas may only be placed where a hazardous concentration would be avoided in the event of a gas leak.
- (5) Cylinders shall be secured against falling, tipping or rolling away in welding workplaces. The chosen method of securing must allow them to be easily and safely released. During welding operations, the pressure cylinder shall be placed in a fixed position in such a way that it is not endangered by vehicles or means of transport, moving parts of the equipment or possible movement of the material or its spontaneous displacement.
- (6) Fixed cylinder batteries shall be located in rooms separated from each other and from service buildings; movably installed batteries shall be located in separate rooms when not in use.
- (7) The fire-safe distance between cylinders of welding equipment using flammable gases and a source of open flame in the workplace shall be at least 3 m, unless the manufacturer or importer specifies a different distance as safe for a particular piece of equipment.
- (8) Where welding work using flammable gases is carried out at a welding workplace with more than one welding machine, the cylinders shall be placed at a distance of not less than 3 m apart or separated by a non-combustible solid wall extending at least 0,2 m beyond the height of the set and at least 0,1 m beyond the width of the set.
- (9) No more than two storage cylinders of each gas in use may be at the workplace for one burner set.
- (10) During the welding process, the cylinder shall be within sight of the welder or other person involved in the welding process.
- (11) When the work is finished, the gas supply shall be safely shut off and the gas cylinders shall be removed from the temporary workplace without delay.
- (12) In the case of cylinders, technical gas distribution systems and their accessories, leaks at joints and closures shall be detected by means of non-flammable liquids (e.g. water with foaming agents) which do not contain fats and other substances which could cause a reaction.
- (13) The handling of welding equipment shall not result in the release of unburned gas into the workplace in quantities constituting a hazardous concentration.
- (14) Gas cylinders shall be protected from radiant heat or open flame; cylinders which have been exposed to fire or have become hot during operation shall be removed from service immediately and clearly marked as defective.

- (15) The emptying of cylinders and other pressure vessels shall not be accelerated by direct heating of the cylinders with an open flame or other heat sources not permitted by the manufacturer's or importer's instructions. The operator's regulations shall specify the form of heating and the surface temperatures permissible for certain contents of cylinders and pressure vessels.
- (16) Welding hoses differentiated for flammable gases and oxygen are used for welding work involving flammable gases. The shortest hose, as well as the hose section, shall be at least 5 m long without adjusting couplings; other lengths are permissible only if the manufacturer or importer so specifies for a particular installation.
- (17) Hoses for the supply of combustible gas from the distribution pipe or from cylinders to burners shall be marked with safety markings.
- (18) In the event that oxygen cylinders, fittings, cylinder and valve seals, welding devices or their accessories have come into contact with oil, grease or other contamination, they shall not be used.
- (19) When taking acetylene from a cylinder, any heating of the cylinder above 50 °C shall be checked. In the event of an exothermic reaction in the cylinder, a written procedure for the handling of the cylinder shall be established, based on the conditions given by the manufacturer or importer.
- (20) After transporting the acetylene cylinder to the welding workplace, the withdrawal of acetylene can be started after 1 hour at the earliest. This condition does not have to be met provided the cylinders were transported in an upright position and not laid down before use. The cylinder shall be in the vertical position or tilted upwards with the valve at an angle of at least 30° from the horizontal when acetylene is withdrawn.
- (21) In the event of a fire occurring at a welding workplace where cylinders and other pressure vessels containing welding or other gases are located or are in dangerous proximity to the workplace, they shall be removed immediately to a safe place. First, filled cylinders and other full pressure vessels are removed. The specific procedure shall be based on the fire safety requirements set by the manufacturer or importer. If it is not possible to carry out such manipulation, it shall be reported to the fire protection response unit what cylinders and pressure vessels, including their contents, are in the burning or endangered area.
- (22) When handling oxygen cylinders and their oxygen accessories, it is necessary to avoid
- a) their contamination by fats and substances or materials containing fats,
  - b) use of materials not complying with fire safety conditions according to the type of welding technology.
- (23) Only specially authorised organisations are allowed to transfer liquefied hydrocarbon gases and acetylene dissolved under pressure.
- (24) If gas leaking from leaks in the pressure reducing valve, cylinder valve, hoses and other fittings ignites, the cylinder valve shall be immediately closed and the flame extinguished.
- (25) When the flame backfires and burns inside the burner, the combustible gas and oxygen valves on the burner shall be immediately closed and the burner cooled.
- (26) If a flame enters the hose and the pressure reducing valve, first the cylinder valve on the flammable gas cylinder and then on the oxygen cylinder shall be immediately closed. The burner can only be ignited after the cause and effect of the backfire have been eliminated.
- (27) Acetylene withdrawal points on acetylene pipelines shall be equipped with a dry or aqueous preform. The protective distance of the water object from the flame shall be at least 3 m and the protective distance of the dry object shall be at least 1 m.
- (28) When welding, acetylene generators are considered to be an explosion hazard with subsequent fire.
- (29) Portable acetylene generators intended for welding may only be used
- a) in well-ventilated spaces with a minimum volume of 100m<sup>3</sup>; in the case of other technical solutions, it must be demonstrated that at least the same level of fire safety has been achieved,
  - b) marking the location of the generator with safety signs,
  - c) with protection against unwanted manipulation of the equipment.
- (30) It is not permitted to handle open flames within 3 m of a portable generator unless otherwise specified by the manufacturer or importer.
- (31) When repairing an acetylene generator by welding, these generators are considered to be explosion hazardous vessels with subsequent fire.

(32) When welding, the propane-butane in the gaseous phase can only be withdrawn from the cylinder when the cylinder is in a vertical position, with the cap upwards. Propane-butane in the gaseous or liquid phase may be withdrawn from the cylinder in a position other than upright only if the documentation allows the manufacturer or importer to do so.

### **3.2.2. Electric Arc Welding**

- (1) When electric arc welding is carried out in an area with a risk of explosion with subsequent fire, electric welding sources shall be located outside such an environment, unless otherwise permitted by the manufacturer or importer.
- (2) The object to be welded shall be secured so that during welding the electric current does not pass through other than designated paths and over other than designated objects. These routes and objects must be identified to eliminate the possibility of fire.
- (3) The welding cable must be connected to the object to be welded or to the pad by a welding clamp.
- (4) Substitution of electrical conductors and welding clamps with other than prescribed or approved conductors and clamps (e. g. various metal objects, parts of structures, chains, ropes) is not permitted.
- (5) Electrical wire connectors shall be placed on a non-flammable insulating substrate.
- (6) Electrode holders shall be placed only on an insulating pad or on a stripped stand and shall be secured against accidental contact with conductive objects so that accidental arcing and splashing of the hot metal cannot occur.
- (7) Electrode holders shall not be cooled by immersion in water.
- (8) Unburned electrodes shall be deposited in a designated safe place (e. g. in a non-flammable container with sand).
- (9) When welding is completed, the welding equipment must be disconnected from the power source.

## **3.3. COMPLIANCE WITH SAFETY REQUIREMENTS ARISING FROM GENERALLY BINDING LEGAL REGULATIONS IN THE LOCAL CONDITIONS OF THE EMPLOYER/CUSTOMER**

### **3.3.1. Use of Welding Equipment in General**

- (1) The use of welding equipment means the activities associated with, in particular, starting, stopping, transporting, repairing, adjusting, handling, modifying, maintaining and cleaning the equipment throughout its operation. Welding equipment shall be used in accordance with the conditions in paragraph (2).
- (2) The conditions for the use of welding equipment are specified in the Standards, in particular:
  - a) the relevant generally binding legislation,
  - b) the operating documentation of the equipment (a set of documents containing the accompanying documentation, the record of the last or extraordinary inspection or check, if so provided for by special legislation, or, in the absence of such legislation, if so provided for by the accompanying documentation or by the Employer),
  - c) the accompanying documentation of the welding equipment (a set of documents containing the manufacturer's instructions for assembly, handling, repair, maintenance, initial and subsequent periodic inspections and revisions of the equipment, as well as instructions for any replacement or modification of parts of the equipment),
  - d) the local operational safety regulation and other internal regulation (regulation governing the use of the equipment in the local conditions of the Employer/Customer),
  - e) the standard value of a specific technical requirement contained in the relevant Czech technical standard.

An informative overview of the Standards used and valid as of the indicated date of revision is given in Annex 6. This informative overview is without prejudice to the obligation to always use the current Standards.

- (3) Before welding commences, welders shall be properly familiarized with the Rules, local safety regulations and other internal regulations relevant to their activities in the local conditions of the Employer/Customer.



### **3.3.2. Use of Welding Equipment in Local Conditions that Specifically Require Special Precautions**

(1) The identification of workplaces for activities which, in the local conditions of the Employer/Customer, explicitly require special safety measures (i. e. professional supervision of their performance must be ensured, special safety measures must be specified in the written welding permit, etc.), including the specification of these measures, shall be regulated by another special internal regulation on Workplace Safety for Activities with Increased Fire and Explosion Hazards.

(2) In the case of Employer/Customer activities on pressure equipment (HPE), the internal directive - Repair of Dedicated Pressure Equipment and Pressure Piping, Testing Methodology and Documentation shall be followed.

### **3.3.3. Requirements for Welding Workplaces**

#### ***3.3.3.1. Designation, Registration and Control of Permanent and Portable Welding Workplaces***

The arrangement, marking, recording and control of permanent welding workplaces shall be in accordance with the Standards. Permanent welding workplaces are subject to the approval of the Employer's competent professional staff (at least the administrator of the technology concerned and employees qualified in safety, fire protection and environmental protection).

#### ***3.3.3.2. Designation of Portable, Mobile and Fixed Welding Equipment***

(1) Each portable, mobile and fixed welding equipment must be permanently and visibly marked at the appropriate place with a label with the name of its owner - the name of the company, the name of the responsible person, the place of permanent storage and telephone contact.

(2) In the case of equipment owned by the Employer, the designation must also include the name of the department to whose organisational competence the employee belongs who is recorded in the Employer's accounting records as the person materially responsible for the equipment, i. e. the person responsible for the use of the equipment.

#### ***3.3.3.3. Designation and Marking of the Place for Storing Welding Equipment and Welding Cylinders***

(1) When handing over the workplace, a place must be reserved for welders for safe storage of welding sets and welding cylinders. At the entrances, this space must be visibly marked with the information "Cylinders".

(2) Designated persons responsible for the use of welding equipment shall designate a place for welders to safely store operating and storage cylinders for welding. The welding cylinders must be transported from the temporary workplace to a designated place immediately after the welding is completed and secured against tampering by unauthorised persons.

### **3.3.4. Maintenance, Repairs, Inspections and Revisions of Employer-owned Welding Equipment**

(1) Maintenance, repairs, periodic inspections and revisions of welding equipment owned by the Employer shall be carried out by designated persons responsible for the use of the welding equipment in accordance with the accompanying documentation of the welding equipment concerned and the Standards through an authorised service centre.

(2) A record sheet (welding equipment logbook) in which periodic inspections, electrical and other inspections are recorded is kept by the person responsible for the welding equipment. Who checks and guarantees the accuracy of the data.

#### ***3.3.4.1. Inspections of Electric Welding Equipment***

(1) Arc welding sources shall be cleaned within the periodic inspection.

(2) Electrical welding equipment which has not been in service for more than half a year shall be tested by an authorised person with an appropriate electrical qualification before being put back into service. When used or stored in dusty or humid environments, it must be tested once a month.

### 3.3.4.2. *Hose and Pressure Relief Valve Leak Checks*

According to the standard, hose leaks must be tested at least once every three months. A record of the inspection must be made and signed by the Employee who carried out the inspection. The leak check of hoses and pressure relief valves shall also be carried out before using the welding set in areas where there is a risk of fire or explosion.

The Employee to whom the welding set has been provably entrusted for use - usually the welder - is responsible for inspections and record-keeping.

## 3.4. PROFESSIONAL COMPETENCE OF WELDERS

### 3.4.1. Validity of Welders' Authorisations

(1) The validity of welding tests according to the standards is two years. If the welder's test is not renewed within this period or if the welder does not have a six-month confirmation of the certificate in accordance with the standard on the performance of welding work or a record in the welder's employment card and the welder's medical record, he shall not be authorized to carry out such welding work and shall not be entrusted with it.

(2) Only an authorised employee of the Contractor's welding supervisor is authorised to issue a confirmation of welding work performed within the six-month period. Test validity periods and records of testing are indicated in the welder's licence and certificate or in the welder's register.

### 3.4.2. Employer's Welders

(1) The Employer's organisational unit in charge of keeping personnel files of employees (personnel department) shall keep records of welders from among the employer's employees.

(2) The register of welders shall contain the name and surname, the type of authorisation to carry out welding work, the date and type of the last test, the certificate of performance of welding work for the last 6 months.

(3) The renewal of the professional competence of welders shall be regulated by another internal regulation of the Employer on the Acquisition and Improvement of Qualifications. A recommendation that the renewal or improvement of the qualifications of the welder concerned is in the interest of the Employer and should be carried out shall be issued by the organisational unit of the Employer responsible for keeping the personnel files of the employees (Personnel Department) or by the head of the department in which the welder concerned is integrated.

## Annex 1 - Minimum Requirements for the Content of the Request for Proposal

<i>PROPOSAL</i>	Minimum requirements for the content of the Proposal:
P01	Precise specification of the scope of work. Specification of the requirements for compliance with the Norms or Product Standards (relevant valid generally binding legal regulations, technical regulations, requirements of state professional supervision bodies or internal regulations of the Customer concerning the performance of welding or handling technologies intended for welding or ensuring safety and protection of life and health of persons, fire protection, safety and protection of property and the environment during welding) Recommendations and specific requirements of the Customer.
P02	Requirement for a customer welding audit at a future Contractor (if subcontractors are also invited to execute it at the level of both legal and natural persons, it is necessary to focus the customer audit up to this level).
P03	Where appropriate, a requirement to document the person responsible for future work for the welding area.

	Requirement to provide the original written appointment letter of the welding supervisor for the work, including evidence of appropriate competence as specified in the scope of activities and responsibilities in EN ISO 14 731. The appointment letter shall also contain information on the estimated monthly amount of time in hours devoted to the performance of welding supervision.
P04	Requirement to prove that the conditions for the execution of the work have been met in accordance with EN ISO 3834-2.

## Annex 2 - Minimum Requirements for the Content of the Tender

<i>TENDER</i>	Minimum requirements for the content of the Tender (responds in detail to the RFP):
N01	Specification of the delivery solution in terms of technology and personnel, including determination and confirmation of the time schedule and price for the delivery.
N02	Invitation to carry out a customer welding audit by offering the date and time of execution.
N03	If requested, documentation of the Appointment Letter of the welding supervisor of the work according to the specification of ČSN EN 14 731.
N04	Demonstration of how the requested party is able to ensure that the resulting welding quality requirements are met in accordance with EN ISO 3834-2.

## Annex 3 - Pre-Execution Requirements

<i>BEFORE EXECUTION</i>	It is inspected before the execution begins:
R01.01	Execution documentation - review and approval.
R01.02	Work Quality Plan - review and approval.
R01.03	Welding supervision, appointment - approval.
R01.04	WPS welding documentation - inspection and approval.
R01.05	WPQR welding documentation - inspection and approval.
R01.06	Welding inspection and test plan - inspection and approval.
R01.07	Welders, operators and welding workers - validity of qualifications.
R01.08	Welding work tests - release for work.
R01.09	Persons performing NDT tests - approval.
R01.10	Work instructions and technological regulations - approval.
R01.11	Welding resources, deployment, equipment, calibration - approval.
R01.12	Storage, handling of basic materials - approval.
R01.13	Storage, handling and drying of additional materials - approval.
R01.14	Providing inspection activities, measurements, inspection logs.
R01.15	Subcontracting of sub-activities - control and approval.
R01.16	Subcontracting of units - control and approval.
R01.17	Weld stationing, welding logs - approval.
R01.18	VT Protocols - Approval.
R01.19	MT Protocols - Approval.
R01.20	PT Protocols - Approval.
R01.21	UT Protocols - Approval.
R01.22	RT Protocols - Approval.

## Annex 4 - Requirements During Realization

<i>REALIZATION</i>	During the realization, the following is inspected:
R02.01	Weld identification, on-site stationing and recording of the actual condition in the documentation.
R02.02	Deployment of approved welders and operators, trained persons and inspection of the fulfilment of the quality requirements of the work.
R02.03	Compliance with the technological discipline of welders and the frequency and quality of the Contractor's welding supervision activities.
R02.04	Visual inspection of welds and compliance with quality requirements set out in design and drawing documentation and transfer to welding documentation.
R02.05	Realization and status of evaluation of other non-destructive inspections specified in the design and drawing documentation and transferred to the welding documentation.
R02.06	Assessment of the frequency of repairs occurring on the work as a whole, but also the number of repairs occurring on the weld, the method of repair and the control and approval of the procedure for its realization.
R02.07	Correctness of all inspection operations on welds, such as non-destructive testing, destructive testing, hardness testing, etc.
R02.08	Completion of units and approval, release of these units for further operations such as thermal treatment, insulation, coating, etc.

## Annex 5 - Post-Realization Requirements

<i>AFTER REALIZATION</i>	Upon completion of the realization, the conformity of the delivery with the contractually agreed quality documentation is assessed, which must include:
R03.01	Approved "Certification of Contractor Eligibility".
R03.02	Approved "Welding Supervision Personnel".
R03.03	Approved "NDT personnel".
R03.04	Approved "Design Documentation".
R03.05	Approved "Drawing Documentation".
R03.06	Approved "Inspection Certificates of Basic Materials Used".
R03.07	Approved "Inspection Certificates for the additive materials used".
R03.08	Approved "Work Quality Plan".
R03.09	An approved "Welding Plan or Other Weld Stationing Document".
R03.10	Approved "Inspection and Test Plan".
R03.11	Approved "WPS".
R03.12	Approved "WPQR".
R03.13	Approved "Welding Supervision Records".
R03.14	Approved "NDT Protocols".
R03.15	Approved "Heat Treatment Protocols".
R03.16	Approved "Hardness Measurement Protocols".

## Annex 6 - Informative Overview of the Standards

Change number: 00 (for the Rules)

Date of revision: 12/07/2018

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### **1. GENERAL BINDING LEGISLATION**

- 1) DECREE No. 48/1982 Coll., laying down the basic requirements for ensuring the safety of work and technical equipment
- 2) DECREE No 87/2000 Coll., laying down fire safety conditions for welding and heating of bitumen in fusible vessels
- 3) ACT No. 309/2006 Coll. Act regulating other occupational safety and health requirements

### **2. TECHNICAL REGULATIONS**

- 1) ČSN 05 0000 - Welding. Metal welding. Basic terms
- 2) ČSN 05 0600 - Welding. Safety provision for metal welding. Workplace design and preparation
- 3) ČSN 05 0601 - Welding. Safety provisions for metal welding. Operation
- 4) ČSN 05 0610 - Welding. Safety provisions for metal flame welding and metal cutting
- 5) ČSN 05 0630 - Welding. Safety provisions for metal arc welding
- 6) ČSN 05 0650 - Safety provisions for resistance welding
- 7) ČSN 05 0705 - Training of workers and basic courses for welders
- 8) ČSN EN ISO/IEC 17 020 - Conformity assessment - Requirements for the activities of different types of inspection bodies.
- 9) ČSN EN ISO 14 731 - Welding supervision - Tasks and responsibilities
- 10) ČSN EN ISO 3834-1 - Quality requirements for fusion welding of metallic materials. Part 1: Higher quality requirements
- 11) ČSN EN ISO 3834-2 - Quality requirements for fusion welding of metallic materials. Part 2: Higher quality requirements
- 12) ČSN ISO 10005 - Quality management systems - Guidelines for quality plans
- 13) ČSN EN ISO 9606-1 - Welding. Welding tests. Fusion welding. Part 1: Steel
- 14) ČSN EN 13067 - Plastics welding personnel - Proficiency tests for welders - Welding of joints and thermoplastics

### **3. INTERNAL REGULATIONS OF THE EMPLOYER/CUSTOMER**

- 1) Workplace safety in activities with increased risk of fire and explosion
- 2) Repair of dedicated pressure equipment and pressure piping, testing methodology and documentation
- 3) Acquiring and deepening qualifications



## **Annex 7 - Representatives of the Customer's Inspection Supervision**

Change number: 00 (for the Rules)

Date of revision: 12/07/2018

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### **1. APPOINTED EMPLOYEES OF THE CUSTOMER TO REPRESENT THE CUSTOMER'S INSPECTION SUPERVISION**

- 1) Ing. Petr Zíbar
- 2) Bc. Radek Polián
- 3) Stanislav Cífka
- 4) Ing. Pavel Hammerlindl
- 5)