SPOLANA s.r.o. Neratovice	**GUIDELINES**	No. o: S-3.16.1 Star number: SGŘ-23-03 Page and 1 of 18

TITLE: **WORK ON ELECTRICAL EQUIPMENT AND ITS OPERATION**

Manager: Energy and Water Management Plant

Date of first effect: July 17, 2019

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1 INTRODUCTION

This directive sets out:

- Basic rules for ensuring safety when operating electrical equipment, working on electrical equipment, and working near live parts of electrical equipment at SPOLANA s.r.o.
- Basic requirements that must be met and minimum measures that must be taken to ensure that all activities are performed safely.
- Detailed requirements for the professional competence of SPOLANA s.r.o. employees who come into contact with electrical equipment during its operation or while performing their work, in accordance with Government Regulation No. 194/2022 Coll. and in connection with the basic qualification requirements – see process P-3.8.4 Human resources management – Training.

Appendix No. 6 to this directive sets out the formal layout and requirements of the operating rules for electrical equipment.

2 SCOPE OF APPLICATION AND DISTRIBUTION LIST

When performing activities related to electrical equipment on the premises of SPOLANA s.r.o., this directive is:

- binding for company departments in which these activities are performed (applies to activities performed by SPOLANA s.r.o.'s own employees)
- contractually binding for external companies that contractually provide these activities to company departments (they provide operation of electrical equipment, work on electrical equipment, and work in the vicinity of live parts on the premises of SPOLANA LLC based on a contractual relationship).

Compliance with this directive and, if necessary, other legislative company documents must be contractually secured by the client or lessor with the relevant external company.

This directive is distributed:

- to company departments – in electronic form in the Lotus Notes environment according to access rights,
- to the external company ORLEN Service Česká republika s.r.o. – in electronic form in the Lotus Notes environment,
- other external companies – on the SPOLANA s.r.o. website "http://www.spolana.cz/" under "Services and premises /Legislation".

3 SAFETY RULES FOR OPERATING AND WORKING ON ELECTRICAL EQUIPMENT

Main principles:

- Electrical equipment must be operated and maintained in a condition that complies with applicable technical standards and generally binding legal regulations.
- Compliance with this condition is ensured in accordance with S.3.11.7 "Preventive maintenance and inspection of electrical equipment."

Safe operation and work:

- For all activities (operation and work) on electrical equipment and in its vicinity, an electrical hazard analysis must be performed (see Annex 1 to this directive), according to which the person responsible for the technical condition of the electrical equipment (see Chapter 9 of this directive) determines and approves work procedures. The analysis is performed by:
  - the person preparing the documentation (e.g., operating rules, BI, where the results of the analyses may be stated), or
  - issuer of order "B".

Safe operation:

- Only persons with the qualifications required for the relevant equipment in accordance with Chapter 5 of this directive may operate electrical equipment.
- If PPE and work aids are prescribed for operation, the operator must use them.
- Persons operating electrical equipment must be familiar with the equipment being operated and its function.
- Where operating rules and safety instructions have been drawn up, they must be accessible in a suitable place and persons performing the relevant activity must be demonstrably familiar with them.

Safe work:

- Work may be performed in accordance with S-3.11.5 "Authorization of work on equipment and work under exceptional conditions" and Chapter 10 of this directive.
- Before starting work, the person responsible for the technical condition of the electrical equipment must determine the procedure, assess the risks associated with the work, and determine which persons may perform the work and their number.

- Persons working on electrical equipment must be properly familiarized with this work.
- Safety measures must be established; if more than one person is working, a work supervisor must be appointed (by the manager of the external company performing the work).
- For complex work, the person responsible for the technical condition of the electrical equipment must prepare it (including approval) in writing.

Testing of PPE and work equipment

If PPE and work equipment are used when operating and working on electrical equipment, they must always be in good condition. Before each use of these devices and equipment, it is necessary to ensure that they are in proper condition.
PPE and work equipment must be tested in accordance with the relevant standards and regulations within the prescribed time limits, and records of the tests performed must be kept.

- PPE are items that protect a person from the dangerous effects of electricity, the harmful effects of electricity, the harmful effects of the working environment, or other hazards. These include, for example, suitable protective clothing, protective insulating gloves, insulating galoshes, protective goggles and shields, etc.
- Work tools are items needed to work on or near electrical equipment, or to operate electrical equipment. These include, for example, insulated switching rods, switching levers, voltage testers, insulated tools, measuring instruments, insulating mats, short-circuiting and grounding devices, barriers, rescue hooks, warning signs, etc.

4 DEFINITION OF WORK ON ELECTRICAL EQUIPMENT

4.1 Work on low-voltage electrical equipment without voltage

Work on low-voltage electrical equipment without voltage is considered to be work in which the equipment or part of the equipment being worked on is disconnected from the voltage, secured against being switched back on, and properly secured. If live equipment is located near the workplace, it must be protected against contact and dangerous proximity by a barrier, partition, cover, or insulated enclosure, or measures must be taken for working near live equipment.

4.2 Work on de-energized medium-voltage and high-voltage electrical equipment

- Work on de-energized medium-voltage and high-voltage electrical equipment is considered to be work performed at a workplace where all parts of the medium-voltage and high-voltage electrical equipment, including all outdoor and cable supply lines, are disconnected from the power supply and secured, and all entrances to adjacent areas with live medium-voltage and high-voltage electrical equipment are locked or secured with barriers.
- This also includes work on electrical equipment under construction that has not yet been connected to voltage, is not located near live equipment, and cannot be subject to induced voltage.
- This also includes work on electrical equipment that is reliably disconnected from all possible power supplies (disconnected busbars and other connections to an external power source). If low-voltage equipment remains at the workplace, the prescribed provisions for low-voltage equipment must be observed.

This work may be performed by persons who have received at least basic training under the supervision of a competent person. A competent person may perform this work alone.

4.3 Work on live electrical equipment. Routine work on live equipment

4.3.1 Measurement

Measurement is defined as all activities that measure physical quantities in electrical equipment. Measurements must be performed by a person with the appropriate qualifications in accordance with an approved work procedure.

- When measurements are performed on electrical equipment, suitable and safe measuring instruments must be used. The functionality of the instruments must be checked before use and, if necessary, after use.
- If there is a risk of contact with live parts, the person performing the measurements must use the prescribed PPE and work aids and comply with measures to protect against electric shock and the effects of short circuits and electric arcs.
- The person responsible for the technical condition of the electrical equipment shall decide whether methods for working without voltage, for working under voltage, or for working in the vicinity of live equipment will be used.

4.3.2 Testing

Testing includes all activities involving the inspection of the electrical, mechanical, or thermal condition of electrical equipment. Testing includes activities related to the proper functioning of electrical protective, safety, and other circuits.

- Testing may include measurements that must be performed in accordance with section 4.3.1 of this guideline.
- Testing must be performed by persons with appropriate qualifications in accordance with established work procedures.
- Testing of equipment that has been disconnected must be carried out in accordance with the regulations for working without voltage. If it is necessary to disconnect or dismantle earthing or short-circuiting devices, safety measures must be observed to prevent the equipment from being connected to voltage from another possible power source and thus causing injury to persons by electric current.
- If testing is performed under normal power supply conditions, the articles relating to work procedures for work on live electrical equipment or for work in the vicinity of live electrical equipment must be observed.
- If testing is performed using an external power source, measures must be taken to ensure that:
  - the equipment is disconnected from other possible power sources
  - The device must not be powered by any power source other than an external power supply.
  - During testing, safety measures against electrical hazards are taken, which include all persons present.
  - The disconnection point must have sufficient insulation parameters to withstand the simultaneous application of the test voltage on one side and the working voltage on the other.

4.3.3 Replacing fuses

- If there is no work procedure for replacing fuses under voltage, fuses must be replaced in a de-energized state.
- For low-voltage equipment, if the fuse is installed in a device that protects persons from direct contact and the possibility of a short circuit, the replacement may be carried out by an instructed person without verifying the presence of voltage. If the condition of protection against direct contact is not met, the replacement of fuses may be carried out by a knowledgeable person using appropriate work tools and PPE.
- For high-voltage equipment, the replacement must be carried out by a knowledgeable person in accordance with the appropriate work procedures.

4.3.4 Securing the workplace

Securing the workplace involves working on live equipment to ensure safety measures for work on de-energized equipment or in the vicinity of live parts. It is performed by persons authorized by the person responsible for the technical condition of the electrical equipment, including the determination of their qualifications and their number according to the voltage and type of equipment.

4.3.4.1 Complete disconnection (shutdown)

- The part of the equipment being worked on must be disconnected from all possible power sources, including preventing possible connection to live equipment via measuring transformers and instruments, arc suppression chokes, etc.
- Disconnection must be achieved by means of an air gap or effective insulation that ensures the same level of safety at the point of disconnection.
- Parts of electrical equipment that remain electrically charged after complete disconnection from the network (e.g., capacitors and cables) must be discharged by appropriate means.

4.3.4.2 Protection against re-energization

- Switching devices used to disconnect electrical equipment must be protected against re-energization or unauthorized energization in accordance with the operating rules for the relevant substation in order to prevent re-energization.
- If an auxiliary power source is used to operate the switching devices, it must be secured.
- If remote-controlled switching devices are used, it must be ensured that they cannot be switched back on from any control location by local or remote control in the manner specified in the operating rules or in accordance with command "B" (see Annex 7 to this Directive). All signaling and lockable systems used for this purpose must be reliable.

SAFETY SIGNS MUST BE DISPLAYED BY THE PERSON RESPONSIBLE FOR THE WORKPLACE AT THE DISCONNECTION (SHUTDOWN) POINTS:

DO NOT SWITCH ON! WORK IS BEING PERFORMED ON THE EQUIPMENT!

4.3.4.3 Verification of no voltage

- The absence of voltage must be verified on all poles and phases of the electrical equipment at the workplace or as close to the workplace as possible.
- The actual status of disconnected parts of equipment must be verified using the specified procedure or in accordance with the operating rules. In addition to voltage testers, this also includes, for example, the use of voltage indicators built into the equipment or the use of separately connected indicating devices. Where possible, these additional devices must be checked immediately before use and after activation.

4.3.4.4 Grounding and short-circuiting

At workplaces of all MV and HV equipment and some LV equipment, the parts being worked on must be grounded and short-circuited from all possible power supply sides.

- Grounding and short-circuiting devices or instruments must first be connected to ground and then to all conductors of the de-energized equipment.
- Grounding and short-circuiting must also be performed at the workplace. If this is not possible, at least one grounding and short-circuiting device must be visible from the workplace.
- In all cases, it must be ensured that the grounding and short-circuiting devices or instruments, cables, and clamps used for bonding are dimensioned to withstand the short-circuit current in the electrical equipment where they are installed.
- Measures must be taken to ensure that the earthing devices provide constant safety for the duration of the work. If the earthing or short-circuiting devices must be removed during measurement or testing, measures must be taken to prevent the possibility of electric shock.
- Where remote control of the earthing switch is used, the status of the earthing switch must be visually checked, even if it is indicated by a remote signaling system.
- Grounding and short-circuiting of the relevant equipment may only be performed after checking all sides of the power supply.

4.3.4.5 Measures to prevent access to live parts

In accordance with the operating rules, measures shall be taken to prevent persons from accidentally entering areas with live parts under voltage. These measures include, for example:

- fencing,
- marking the route to the workplace,
- locking with non-interchangeable keys,
- marking with safety signs, sealing tape,
- sealing of cellar locks, etc.

When working in fenced-off areas (cells, etc.), the person securing the workplace must familiarize other persons involved in the work with the escape route so that they can quickly leave the work area in case of danger. The escape route must be kept clear at all times. A mandatory safety sign must be posted at the workplace.
This is not done where there is no possibility of confusion between workplaces.

WORK ONLY HERE

4.4 Working near live electrical equipment

4.4.1 Electrical work

This involves work on electrical equipment in the approach zone, where persons or objects do not touch live parts and must not approach exposed live parts at a distance less than that specified in Annex 3 to this Directive.

- The specified safety measures must be observed when performing this work.
- Any necessary additional measures must be taken before work commences.
- Before commencing this work, it is necessary to check that the grounding of the parts to be worked on is not interrupted.

4.4.2 Basic principles for working near live parts

4.4.2.1 Protection by safe distance and supervision

When protection by a safe distance is used and, depending on the qualifications of the persons, supervision is also required, this method of work must include, in particular:

- a safe distance of not less than $_{DL}$ according to Annex 3 of this directive,
- conditions for authorizing persons to perform the required activity (i.e., workers and supervisors with regard to the voltage levels of the equipment and the qualifications of workers, see Chapter 5 of this directive),
- measures to prevent entry into the protective space of live electrical equipment.

4.4.2.2 Protection by a barrier, partition, cover, or insulating cover

- These protective devices must be selected and installed so as to provide adequate protection against electrical and mechanical stress.
- When installing protective devices inside the protective space, the electrical equipment must be de-energized or procedures for working on live electrical equipment must be adopted.
- When placing protective devices outside the protective space, either work procedures for working on de-energized equipment must be applied, or means of protecting persons placing these devices in the protective space must be used. Procedures for working on live electrical equipment must be used.
- If the above conditions are met, work in the approach zone may be carried out using normal procedures by knowledgeable or trained persons. Means used as barriers (partitions, covers, or insulated covers) must be properly maintained and be safe during work activities. If these means do not provide full protection for uncovered live parts, an instructed person must work near these live parts under supervision.

4.4.2.3 Working conditions

- The workplace must be secured in such a way that the worker has both hands free.
- Before starting work, the supervisor must familiarize the workers with the work on equipment near live parts and draw their attention to maintaining safe distances, electrical equipment that remains live, and the need to ensure safety.
- The boundaries of the workplace must be carefully marked, and attention must be paid to unusual circumstances or conditions.
- The workplace must be marked externally by appropriate means (flags, ropes, signs, safety labels and signs, etc.).
- Adjacent uncovered live switchboards may also be distinguished by other clearly visible means.
- A person performing work on electrical equipment must be particularly careful when handling long objects, such as tools, cable ends, pipes, ladders, etc.

4.4.2.4 Work on low-voltage electrical equipment near live parts

- Work on electrical equipment near live parts of low-voltage equipment is considered to be work in which the equipment is not disconnected from the voltage, but during which the worker does not touch the live parts, even with tools, or work in a place that is separated from uncovered live parts by a barrier, partition, or cover preventing dangerous contact.
- An instructed person may work under supervision up to a distance of 300 mm from live parts, or in contact with a cover or partition protecting against accidental contact. They must not work at a shorter distance at all.
- When working near live low-voltage parts, the person must ensure that they do not come closer than the permitted distance with any part of their body, clothing, or conductive objects with which they are in contact.
- When installing barriers during equipment maintenance, where the equipment does not have covered live parts, the width of the passageway must be taken into account in accordance with ČSN 33 2000-7-729.

4.4.3 Non-electrical work

4.4.3.1 Cleaning work in areas with electrical equipment

- If cleaning is carried out in medium and high voltage electrical facilities and if the electrical equipment is protected by solid or mesh barriers, the persons designated for cleaning must be at least instructed.
- Where electrical equipment is not designed in this way, the work must be carried out by persons who have at least been instructed, under the supervision of a person who is at least knowledgeable. During this activity, the distances specified in Table 1 of Annex 3 to this Directive must be strictly observed.

4.4.3.2 Construction work

- Before commencing any work in the vicinity of live parts, the person organizing and supervising the work must inform all persons of the dangers that may arise from electrical equipment. The working conditions are determined by the person responsible for the technical condition of the electrical equipment.
- During construction work and other non-electrical work, such as:
  - earthworks
  - work with lifting equipment
  - installation work
  - transport work
  - geometric surveying
  - work with earth-moving machinery and other construction machinery
  - work with agricultural machinery
  - painting and renovation
  - tree removal and pruning

  The specified distance from live parts of electrical equipment must be maintained (see Appendix 3 to this directive).

- This distance applies to both persons performing work and all machines, tools, transport, lifting and assembly equipment, transported loads, etc.
- This distance must be derived (calculated or measured) from the nearest live conductors or uncovered live parts of electrical equipment, both horizontally and vertically.
- If the prescribed distance is to be sufficient for work by persons without electrical qualifications and without additional safety measures (such as supervision at work, etc.), this distance must always be greater than the distance $_{Dv}$ in Table 1 of Annex 3 to this Directive.
- The prescribed distances are determined with regard to:
  - the highest voltage of the equipment,
  - the type of work performed,
  - tools and equipment used for work,
  - qualifications of persons performing this work.
- For outdoor wiring, all possible conductor fluctuations and all possible movements when moving loads must be taken into account (see S-3.11.6 and B-3.16.8 "Safe Work System ZZ at SPOLANA s.r.o."), as well as swings or falls of equipment used to perform the work.

5 QUALIFICATIONS OF PERSONS FOR WORK ON ELECTRICAL EQUIPMENT

5.1 Definition of terms

For the purposes of this directive, the following definitions apply

a) Professional qualification:
- completed secondary education, secondary education with an apprenticeship certificate, secondary education with a school-leaving examination or higher vocational education from the group of fields 26 Electrical Engineering, Telecommunications and Computer Technology,
- completed bachelor's, master's or doctoral degree in the field of Electrical Engineering,
- completed secondary education, secondary education with an apprenticeship certificate or secondary education with a school-leaving examination in another field that meets the requirements for electrical engineering education in terms of content,
- completed bachelor's, master's or doctoral degree in another field of education that meets the requirements for electrical engineering education
- full professional qualification obtained in accordance with other legal regulations and published in the National Qualifications System under the field of qualification "Electrical Engineering, Telecommunications and Computer Technology",

b) Professional qualification obtained under other legislation,

c) Activities on electrical equipment and in its vicinity: operation of and work on electrical equipment and in its vicinity, during which electric shock may occur.

d) Independent work on electrical equipment and in its vicinity work performed on electrical equipment and in its vicinity without the need for supervision or oversight by another person,

e) Electrical equipment power, communication, control, and special equipment that uses the effects of electrical or electromagnetic phenomena for its operation or functioning, and lightning, surge, and static electricity protection systems,

f) Responsible person: an authorized representative of a legal entity or self-employed natural person who operates electrical equipment, whose duties include ensuring the safe operation of electrical equipment and establishing rules for the performance of individual activities on the equipment and the organization or arrangement of the place where these activities are performed.

5.2 Requirements for professional competence to perform activities on electrical equipment

1. Persons responsible for the operation of electrical equipment at SPOLANA s.r.o., legal entities of external companies, and natural persons engaged in business who operate electrical equipment or perform activities on electrical equipment shall ensure that activities and the management of activities on electrical equipment and in its vicinity are performed in specified cases only by professionally competent natural persons in accordance with Section 19 of Act No. 250/2021 Coll. and in compliance with the requirements for their competence pursuant to Sections 4, 6, 7, and 8 of Government Regulation No. 194/2022 Coll.
2. The operation of low-voltage electrical equipment is not considered an activity on electrical equipment requiring professional competence under this regulation.
3. Persons responsible for the operation of electrical equipment and persons responsible for the technical condition of electrical equipment at SPOLANA s.r.o. shall ensure that activities and the management of activities on electrical equipment and in its vicinity are performed, in specified cases, only by persons professionally qualified for the given activity on electrical equipment in accordance with Sections 4, 6, 7, and 8 of Government Regulation No. 194/2022 Coll. Some of the activities of the responsible person specified in § 2(f) of Government Regulation No. 194/2022 Coll. may be delegated to other persons.
4. Managers of departments operating electrical equipment or performing activities on electrical equipment shall ensure that persons professionally qualified to perform activities on electrical equipment pursuant to Sections 4, 6, and 7 of Government Regulation No. 194/2022 Coll. are regularly trained on legal and other regulations to ensure occupational health and safety relating to the performance of their activities, so that their knowledge is regularly deepened, in accordance with the internal regulations of the legal entity or self-employed natural person.
5. Department heads, in cooperation with the human resources department and the relevant educational institution, shall ensure that pupils and students of electrical engineering fields, as part of their practical training, meet the requirements for instructed persons under this regulation before commencing work on or near electrical equipment and that they only perform work on or near electrical equipment that corresponds to their gradually acquired professional knowledge, always under the supervision of a designated person with professional competence corresponding to the nature of the activity.

5.3 Person instructed in accordance with Section 4 of Government Regulation No. 194/2022 Coll.

An instructed person is a professionally competent person pursuant to Section 19 of Act No. 250/2021 Coll., who has been trained within the scope of their activities on legal and other regulations to ensure occupational health and safety when working on electrical equipment and in its vicinity, has also been trained in the area of possible sources and causes of risks on electrical equipment and in its vicinity, has been made aware of possible hazards posed by electrical equipment, has been familiarized with first aid procedures for electric shock injuries, and has had this knowledge verified; A knowledgeable person whose examination under this regulation has expired is also considered an instructed person, and this person may regain the level of professional competence of a knowledgeable person after successfully passing the examination of competence to perform activities in electrical engineering.

The scope of activities that an instructed person may perform is determined by legal and other regulations to ensure occupational health and safety (Section 349(1) of the Labor Code) for work on electrical equipment, including local operating safety regulations.

An instructed person performs in particular:

- independent operation of electrical equipment without voltage restrictions, with the restriction that they may only touch those parts of the equipment that are intended for operation,
- work according to instructions on small and low-voltage electrical equipment without voltage and in its vicinity,
- work under supervision on high-voltage electrical equipment without voltage and in its vicinity,
- work under the supervision of a knowledgeable person in the vicinity of exposed live parts of low-voltage electrical equipment under voltage, at a safe distance from them, or up to the point of contact with an insulating cover protecting against accidental contact with live parts,
- work under the supervision of a knowledgeable person in the vicinity of uncovered live parts of high-voltage electrical equipment under voltage,
- work on electrical equipment in special cases, for which the legal entity or self-employed natural person operating the electrical equipment has prepared and issued special work procedures, with which the person has been instructed in advance and repeatedly familiarized within specified time limits and has been practically trained for this activity; a record shall be made of the familiarization (see Annex No. 9), which shall be signed by the person instructed and the person who carried out the familiarization.

5.4 A knowledgeable person according to Section 5 of Government Regulation No. 194/2022 Coll.

1. A knowledgeable person is:
   a) a person knowledgeable for independent activity (hereinafter referred to as an "electrical engineer")
   b) a person knowledgeable for managing activities (hereinafter referred to as "chief electrical engineer")
   c) an inspection technician
2. A knowledgeable person is professionally qualified to perform all work on electrical equipment within the scope of the issued certificate of successful completion of the examination of professional competence to perform activities in electrical engineering pursuant to Section 19 of Act No. 250/2021 Coll.
3. Inspections of reserved electrical equipment are performed by an inspection technician with a certificate of professional competence for activities on reserved electrical equipment of the relevant scope for performing inspections, in accordance with the law.

5.5 Electrical engineer pursuant to Section 6 of Government Regulation No. 194/2022 Coll.

1. An electrical engineer is a person with professional qualifications pursuant to Section 2(a) of Government Regulation No. 194/2022 Coll. who, after training, has passed an examination of professional competence to perform activities in electrical engineering within the specified scope. An electrical engineer performs activities on electrical equipment and in its vicinity independently, with the exception of special cases based on risk assessment.
2. The minimum length of professional experience required on electrical equipment, depending on its scope and type, to perform the activities of a chief electrical engineer is:
   a) 3 months for the scope designated as E3A
   b) 1 year for the scope designated as E2A and E3B
   c) 2 years for the scope designated as E1A, E2A, and E2B
3. Verification of knowledge by means of an examination specified in Section 9 of Government Regulation No. 194/2022 Coll. shall be carried out by a three-member examination committee, the chair of which must be a person professionally qualified to perform inspections pursuant to Section 11 of Act No. 250/2021 Coll.
4. The training and scope of the examination of professional competence to perform activities in electrical engineering corresponds to the scope of the professional competence required for the activities performed.
5. The scope of professional competence pursuant to paragraph 4 of this point shall be determined in accordance with
   a) the voltage range
      1. up to 1 kV alternating voltage or 1.5 kV direct voltage
      2. no voltage limitation
   b) type of equipment, whether it is equipment in buildings without explosion hazard or with explosion hazard.
6. The examination board may limit the scope of the certificate of professional competence according to the scope of the activities actually performed.

5.6 Chief electrical engineer pursuant to Section 7 of Government Regulation No. 194/2022 Coll.

1. Only a person who has professional qualifications pursuant to Section 2(a) of Government Regulation No. 194/2022 Coll., meets the minimum professional experience requirement pursuant to paragraph 2 of this point, and, after training, has passed an examination of professional competence to perform activities in electrical engineering within the specified scope, may be a chief electrical engineer. A chief electrical engineer may perform all activities that an electrical engineer may perform, manage activities, manage operations, and design reserved electrical equipment that is not subject to authorization under other legal regulations.
2. The minimum length of professional experience required for electrical equipment according to its scope and type for the performance of the activities of a chief electrical engineer is:
   a) 2 years for the scope designated as E2A and E3A
   b) 3 years for the scope designated as E1A, E2B, and E3B
   c) 4 years for the scope designated as E1B
3. Of the minimum length of professional experience referred to in paragraph 2 of this point, at least 1 year must be spent working on electrical equipment of the relevant type and voltage. For the purposes of this directive, the scope of the examination of professional competence to perform activities in electrical engineering is determined in accordance with the scope of authorization under

Annex No. 3 to Government Regulation No. 190/2022 Coll. on reserved technical electrical equipment and requirements for ensuring its safety.

4. Verification of knowledge by means of an examination specified in Section 9 of Government Regulation No. 194/2022 Coll. shall be carried out by a three-member examination committee, the chair of which must be a person professionally qualified to perform inspections in accordance with Section 11 of Act No. 250/2021 Coll.
5. Training and the scope of the examination of professional competence to perform activities in electrical engineering must correspond to the scope of the required professional competence.
6. The scope of professional competence pursuant to paragraph 5 of this point shall be determined according to:
    a) voltage range
        1. up to 1 kV alternating voltage or 1.5 kV direct voltage
        2. without voltage limitation
    b) type of equipment, if it is equipment in buildings without explosion hazard or with explosion hazard
7. The examination board may limit the scope of the certificate of professional competence according to the scope of the activities actually performed.

5.7 Inspection technician pursuant to Section 8 of Government Regulation No. 194/2022 Coll.

1. An inspection technician may only be a person who has professional competence obtained in accordance with Act No. 250/2021 Coll., holds a valid certificate to perform inspections of electrical equipment, is a professionally competent person in accordance with Section 7 of Government Regulation No. 194/2022 Coll. and meets the minimum professional experience requirement under paragraph 2 of this point.
2. The minimum length of professional experience required for electrical equipment, depending on its scope and type, to perform the duties of an inspection technician is:
    a) 4 years for scope E1A and E2A
    b) 2 years for scope E3A
    c) for ranges E1B and E2B 4 years for type A and 1 year for type B
    d) for the range marked as E3B, 2 years for type A and 1 year for type B

5.8 Distinguishing features of reserved electrical equipment:

1. According to the range of reserved electrical equipment:
    a) low-voltage and high-voltage electrical equipment, specifying the voltage range; voltage ranges up to 35 kV, up to 230 kV, or without voltage range restrictions, including equipment for protection against atmospheric electricity, overvoltage, and static electricity E1
    b) Low-voltage electrical equipment up to 1 kV alternating voltage or 1.5 kV direct voltage, including equipment for protection against atmospheric electricity, overvoltage, and static electricity E2
    c) equipment for protection against atmospheric electricity, overvoltage, and static electricity E3
2. According to the type of designated electrical equipment:
    a) equipment in non-explosive areas A
    b) equipment in potentially explosive atmospheres B

6 AUTHORIZATION OF EMPLOYEES TO PERFORM ELECTRICAL ENGINEERING ACTIVITIES

Only employees authorized by the operator of the equipment may operate the MV, LV, HV, and VHV electrical equipment of SPOLANA s.r.o. These may be employees of SPOLANA s.r.o. or employees of an external company authorized by SPOLANA s.r.o. to perform activities on its electrical equipment.
The operator of the electrical equipment shall issue an authorization in accordance with Annex No. 5 to this directive.

Managers may only assign electrical engineering tasks to employees with qualifications in accordance with Chapter 5 of this directive, and must ensure that:

- their subordinates with electrical engineering qualifications who are involved in electrical engineering activities have undergone a qualification examination and participate in regular re-examination every three years
- an employee qualified in accordance with Section 7 of Government Regulation No. 194/2022 Coll. is always appointed in each work section to supervise all employees with qualifications at least in accordance with Section 6 of Government Regulation No. 194/2022 Coll.

- Trained employees or apprentices in electrical engineering fields performed only those activities on electrical equipment that corresponded to their gradually acquired professional knowledge and under the supervision of authorized employees with qualifications at least in accordance with § 6 of Government Regulation No. 194/2022 Coll.

7 TRAINING, EXAMS AND RETESTS OF EMPLOYEES ON THEIR PROFESSIONAL COMPETENCE TO PERFORM ACTIVITIES IN ELECTRICAL ENGINEERING

7.1 Conducting employee examinations in accordance with Section 4 of Government Regulation No. 194/2022 Coll.

- The content and duration of the instruction pursuant to paragraph 1, point 5.3 of this directive are determined by the person responsible for the operation of electrical equipment at Spolana s.r.o., taking into account the nature and scope of the activities on electrical equipment that the instructed persons are to perform.
- The validity of training and verification of knowledge of employees without electrical engineering qualifications for activities pursuant to Section 4 of Government Regulation No. 194/2022 Coll. is 3 years.

7.2 Conducting employee examinations pursuant to Sections 6 and 7 of Government Regulation No. 194/2022 Coll.

1. The subject of training and examinations of professional competence to perform activities in electrical engineering are:
   a) knowledge of the obligations arising from legal and other regulations to ensure occupational health and safety related to activities on electrical equipment of the relevant type and voltage, which the tested person is to perform or manage, as the case may be,
   b) theoretical and practical knowledge of first aid, especially in cases of electric shock,
   c) work and technological procedures, operating and safety instructions, sources and causes of risks associated with work on electrical equipment of the relevant type and voltage, which the person being tested is to perform or supervise,
   d) other essential facts and information affecting work and operational safety when working on electrical equipment.
2. The examination of professional competence to perform activities in electrical engineering consists of two parts, namely
   a) a written test consisting of at least 10 questions covering the scope of paragraph 1(a) and (b),
   b) an oral interview focused on the test results, any errors made in the test, questions focused on professional issues according to the scope and focus of the examinee, and questions concerning procedures and instructions and other essential facts and information specified in paragraph 1(c) and (d).
3. A person who successfully passes the examination referred to in paragraph 2 shall receive a certificate of successful completion of the examination of professional competence to perform activities in electrical engineering.
4. A record must be made of each examination or re-examination, which shall be signed by three members of the commission. The validity of the examination of professional competence to perform activities in electrical engineering pursuant to Sections 6 and 7 of Government Regulation No. 194/2022 Coll. is 3 years.
5. In order to verify the professional competence of employees with electrical engineering qualifications in accordance with the provisions of Section 9 of Government Regulation No. 194/2022 Coll., a five-member examination committee has been established in the company, appointed by the managing director for production at the proposal of the director of the Energy and Water Management plant (the appointment of the examination committee is made by internal communication). The chair of the committee is an authorized employee of the Centralized Maintenance Department, who updates the examination questions in accordance with the applicable legislative company documents. The chair must have the qualifications specified in Section 8 of Government Regulation No. 194/2022 Coll., and the members of the committee must have at least the qualifications specified in Section 7 of Government Regulation No. 194/2022 Coll.
6. The commission is authorized to examine and test employees for activities pursuant to Sections 6 and 7 of Government Regulation No. 194/2022 Coll.
7. The chairperson of the committee:
   a) prepares, conducts, and evaluates the examination pursuant to paragraph 2,
   b) draws up a report on the examination in accordance with paragraph 2 (see Annex No. 4 to this Directive), which contains information on the course and content of the examination, the evaluation of the examination, and the signatures of the three members of the examination committee and the examinee, ensure that the report on the examination of professional competence to perform activities in electrical engineering is kept for at least 6 years and for a maximum of 7 years by the legal entity or self-employed natural person for whom the examination is taken,
   c) issue, on behalf of the legal entity or self-employed natural person for whom the examination is taken, a document certifying successful completion of the examination of professional competence to perform activities in electrical engineering.
8. Before the start of the examination of professional competence to perform activities in electrical engineering pursuant to paragraph 2, the applicant shall submit to the chair of the commission a document proving:
   a) professional or vocational qualifications, to the extent specified for the given level of professional competence, if such a document is required for the given level of professional competence, in the form of an original or a certified copy,

b) length of practice, which is proven by a confirmation from the employer or an affidavit from the person being tested, at least for the length specified for the given level of professional competence, if this document is required for the given level of professional competence,

c) the fact that the professional qualification meets the requirements for electrical engineering education specified in this Regulation, if it is not entirely clear from the document submitted proving professional qualification that it is an electrical engineering professional qualification; the document referred to in this letter may be issued by the school that issued the document proving professional qualification or by the Ministry of Education, Youth and Sports in accordance with another legal regulation.

d) application for the examination of professional competence in electrical engineering pursuant to Government Regulation No. 194/2022 Coll. (see Annex No. 8 to this Directive)

7.3 Organizational arrangements for examinations and testing of employees pursuant to Sections 6 and 7 of Government Regulation No. 194/2022 Coll.

- The company examination board generally holds examinations twice a year – in the first and third quarters.
- Twice a year, the designated employee of the HR department sends a request to the relevant managers to register employees for training events (see process P-3.8.4 Human Resources Management - Training).
- The relevant manager (or an employee authorized by them) will order employees with electrical engineering qualifications in the "Training" database in Lotus Notes to take exams/tests on their knowledge of the relevant provisions of Government Regulation No. 194/2022 Coll.
- The exact date of the examinations/retests will be announced by the authorized employee of the personnel department training required by generally binding regulations, in agreement with the chair of the company examination committee, at least six weeks in advance.

7.4 Issuance of a certificate of successful completion of the examination of professional competence to perform activities in electrical engineering

- Employees who have passed the examination for activities pursuant to Sections 6 and 7 of Government Regulation No. 194/2022 Coll. shall be issued, by an authorized employee of the personnel department (based on documents provided by the chair of the examination committee), with a certificate authorizing them to work on electrical equipment of the relevant type and voltage. Proof of successful completion of the examination of professional competence to perform activities in electrical engineering must be confirmed by the chair of the company examination board.
- Proof of successful completion of the examination of professional competence to perform activities in electrical engineering is a certificate of the examined employee's qualification for activities in electrical engineering within the meaning of Government Regulation No. 194/2022 Coll. The employee is obliged to submit this document to the chair of the committee at each examination.
- The manager or an employee authorized by the manager shall ensure, through the human resources department, that a record of the passed exam (in accordance with Sections 6 and 7 of Government Regulation No. 194/2022 Coll.) is entered into the "Education" database, "Education plan by people" view in Lotus Notes, with a reference to the relevant document proving successful completion of the examination of professional competence to perform activities in electrical engineering.
- An authorized employee of the HR department keeps company-wide records of employees with electrical engineering qualifications in the ORGAPER database in Lotus Notes.

7.5 Examinations and re-examinations

- Testing and re-testing of employees without electrical engineering qualifications will take place at regular intervals of 3 years for activities pursuant to Section 4 of Government Regulation No. 194/2022 Coll.
- Examination and re-examination of employees with electrical engineering qualifications will take place at regular intervals of 3 years for activities pursuant to Sections 6 and 7 of Government Regulation No. 194/2022 Coll.
- Further examinations and re-examinations will take place during the three-year trial cycle of examinations and re-examinations of new employees with electrical engineering qualifications and employees applying for an increase or extension of their qualifications for these activities in accordance with Sections 6 and 7 of Government Regulation No. 194/2022 Coll.
- For each examination or re-examination pursuant to Sections 6 and 7 of Government Regulation No. 194/2022 Coll., a "Protocol on the examination of professional competence to perform activities in electrical engineering pursuant to Section 9 of Government Regulation No. 194/2022 Coll." must be drawn up (see Annex No. 4 to this Directive), which shall be signed by three members of the commission, and a "Certificate of successful completion of the examination of professional competence to perform activities in electrical engineering pursuant to Government Regulation No. 194/2022 Coll." (see Annex No. 4 to this Directive).
- A record must be made of the instruction and verification of knowledge pursuant to Section 4 of Government Regulation No. 194/2022 Coll. by a knowledgeable person who carried out the instruction and verification. The record must precisely define the scope of the instruction and the specifications of the workplace. (see Appendix No. 9 to this directive for a sample).

8 RECOGNITION OF QUALIFICATIONS OF NEWLY HIRED EMPLOYEES

- Of their total professional experience, newly hired employees must have at least 1 year of experience working with electrical equipment of the relevant type and voltage.
- The chair of the company examination board (in agreement with the relevant manager) shall, on the basis of the submitted certificate authorizing work on electrical equipment, the examination record, and the confirmed length of professional experience of the newly hired employee:
  - recognize the submitted certificate in full, or
  - restrict its validity (this fact shall be indicated on the certificate and confirmed by his signature).
- If the existing certificate is not recognized, the newly hired employee will undergo a new examination by the company examination committee after completing the training. During the training period, newly hired employees will be considered as persons instructed in accordance with Section 4 of Government Regulation No. 194/2022 Coll. The length and content of the training will be determined by the relevant manager.
- Transitional provision
  Certificates of professional competence in electrical engineering issued before the effective date of this regulation shall be considered proof of professional competence under this regulation, whereby:
  a) a knowledgeable employee and a knowledgeable employee for independent work shall be considered an electrical engineer pursuant to Government Regulation No. 194/2022 Coll.
  b) a worker for the management of activities, for the management of activities performed by contractors, and for the management of operations shall be considered a chief electrical engineer pursuant to Government Regulation No. 194/2022 Coll.

9 PERSONS RESPONSIBLE FOR ELECTRICAL EQUIPMENT

9.1 Persons responsible for electrical equipment

ČSN EN 50110-1 ed. 3 requires operators (i.e. SPOLANA s.r.o.) to appoint "Authorized Persons with final responsibility for the condition and operation of electrical equipment." At SPOLANA s.r.o., the internal operator of electrical equipment is responsible for the authorization (including its form) and authorizes:

- the person responsible for the operation of electrical equipment
- the person responsible for the technical condition of electrical equipment

In the case of non-production departments, one employee is usually authorized to be responsible for both the operation and condition of electrical equipment.

Form of authorization: valid job description – person responsible for the operation of electrical equipment and person responsible for the technical condition of electrical equipment.

9.2 Division of basic responsibilities of persons responsible for electrical equipment

9.2.1 Person responsible for the operation of electrical equipment:

- in the event of malfunctions, submits requests for repairs to electrical equipment through the person responsible for the technical condition of the electrical equipment,
- issues work permits in accordance with S-3.11.5,
- hands over the equipment for repair and takes over the equipment from repair,
- monitors compliance with work safety in accordance with the issued work permit.

9.2.2 Person responsible for the technical condition of electrical equipment:

- is responsible for the maintenance and upkeep of electrical equipment within the meaning of S.3.11.7 and processes No. 3.11 Management of maintenance, repairs, servicing, inspections, No. 1.5 Maintenance planning and P-1.6 Planning of shutdowns,
- hands over electrical equipment to external companies for repair and takes over repaired electrical equipment,
- monitors compliance with occupational safety by external contractors.

9.3 Local distribution system operator

The operators of local distribution systems (PLDS) at SPOLANA s.r.o. are persons responsible for the operation of electrical equipment (at entrusted plants/departments).
The responsibilities of the local distribution system operator are identical to those specified in section 9.2.1 of this directive; at the same time, they are responsible for compliance with the rules for operating the local distribution system, which are available at the EVH plant.

10 PERSONS AUTHORIZED TO MANIPULATE ELECTRICAL EQUIPMENT AND ISSUE "B" ORDERS

10.1 Handling of equipment

- Only persons authorized by the EVH plant manager to perform such work may handle MV and HV equipment and issue "B" orders.
- Only persons authorized by the person responsible for the technical condition of electrical equipment may handle LV and MV equipment.

The form of authorization in both cases is a written authorization (e.g., see the form in Appendix No. 5 to this directive).

10.2 Persons authorized to inspect electrical equipment during work activities

According to ČSN EN 50110-1 ed. 3, the operator of electrical equipment, specifically the person responsible for the technical condition of the electrical equipment, appoints a "person authorized to inspect electrical equipment during work activities"; this person is:

- when working on low-voltage equipment – the person securing the electrical equipment for the performance of work activities
- when working on high-voltage equipment – the person issuing order B.

Form of authorization: valid authorization for the worker (employee of SPOLANA s.r.o. or an external company) according to Annex No. 5 of this directive.

Person authorized to inspect electrical equipment during work activities:

- assesses the possible consequences of work activities on electrical equipment or parts thereof for which it is responsible,
- assesses the possible effects of electrical equipment on workers during work activities.

11 RELATED DOCUMENTS

Government Regulation No. 194/2022 Coll., on requirements for professional competence to perform activities on electrical equipment and for professional competence in electrical engineering
Government Regulation No. 190/2022 Coll., on reserved technical electrical equipment and requirements for ensuring its safety
Act No. 250/2021 Coll., on occupational safety in connection with the operation of reserved technical equipment and on amendments to related acts
ČSN EN 50110-1 ed. 3 "Operation and work on electrical equipment"
TNI 34 3100 "Operation and work on electrical equipment – Commentary on ČSN EN 50110-1 ed. 3" (TNI = technical standardization information)
ČSN 33 2000-7-729 "Low-voltage electrical installations: Single-purpose equipment and equipment in special buildings – Aisles for operation or maintenance"
S-3.15.2 "Preparation, approval, and issuance of safety instructions"
S-3.11.6 "Lifting equipment and means for binding, suspending, and gripping loads" S-3.11.7 "Preventive maintenance and inspection of electrical equipment"
S-3.12.1 "Records"
S-3.8.9 "Training"
S-3.17.8 "Fire protection"
S-3.11.5 "Authorization of work on equipment and work under exceptional conditions"
Process No. 1.5 "Maintenance planning"
Process P-1.6 "Shutdown planning"
Process P-3.8.4 "Human resources management – Training" Process No. 3.11 "Management of maintenance, repairs, servicing, inspections"
BI 00-01 "Basic Safety Regulations for Employees" B-3.16.25 "Instructions for Operating Electrical Appliances"
B-3.16.26 "Instructions for operating electric hand tools and heaters"

12 RECORD

Record (notation) of instruction – Chapter 5, Section 5.3, Chapter 7, Section 7.5, Appendix No. 9, form template W:\OI_forms\1POUCENIparagraf4.dot
The head of the department and a copy are stored by the authorized employee of the personnel department for a period of 3 years after the expiration of validity.

Appointment of the company examination committee - Chapter 7, Section 7.2 (in the form of an internal communication)
Stored by the chair of the company examination board at their workplace for a period of 3 years after the end of the member's activity in the board.

Proof of successful completion of the examination of professional competence to perform activities in electrical engineering in accordance with Government Regulation No. 194/2022 Coll. - Chapter 7, Section 7.4, Section 7.5, Annex No. 4
Stored at the workplace:

- authorized employee of the human resources department, for a period of 3 years after the expiry of the certificate (copy)
- the relevant manager for the duration of the employee's activities (copy)
- employee

Examination report prepared by the chair of the commission, containing information on the course and content of the examination, evaluation of the examination, and signatures of three members of the examination commission and the examinee – Chapter 7, Section 7.2 Appendix No. 4
The chair of the commission shall ensure the storage of the examination report on professional competence to perform activities in electrical engineering for a period of at least 6 years and at most 7 years for a legal entity or self-employed natural person who takes the examination. It shall be stored in the personnel department.

Application for the examination of professional competence in electrical engineering – Chapter 7, Section 7.2, Appendix No. 8, form template W:\OI_forms\1PRIHLASKA_elektrotechnika.dot
It is stored in the personnel department.

Company-wide records of employees with electrical engineering qualifications
Maintained in electronic form (ORGAPER database) by an authorized employee of the HR department, ensuring training required by generally binding regulations for the duration of the employee's employment at SPOLANA s.r.o.

Authorization for employees - Chapters 6 and 10, Appendix No. 5, form template W:\OI_forms\1POVERENI.dot The original is stored by the employee for whom the authorization is issued, and a copy is stored by the issuer for the duration of the authorization's validity.

List of employees authorized to issue order "B" - Appendix No. 2, point 3
The list is stored in its current form at the main electrical control room of the EVH plant (C2440) and at the relevant medium-voltage substation.

Order "B" - Chapter 10, Annexes 2 and 7
The original "B" order is stored in the "B" order book at the relevant substation (a copy is retained by the company performing the work for which the "B" order was issued). After the "B" order book is filled (from the closing of the last "B" order), the EVH Electrical Plant Operations Manager stores the book for at least one year.
In the event of an emergency, order "B" is stored by the EVH Electrical Plant Operations Manager for a period of 5 years.

Entry in the substation operating log - Appendix No. 2, points 6 and 8
The logbook is stored at the relevant high-voltage substation until it is filled, after which it is stored by the Elektro Z-EVH operations manager for a period of one year.

After the deadline for storing records at the workplace, the above-mentioned employees are responsible for storing them in accordance with S-3.12.1 "Records".

13 INTERPRETATION OF TERMS AND ABBREVIATIONS

13.1 Interpretation of terms and nomenclature

The interpretation of common (frequently used) terms and abbreviations used in this directive and not listed below is part of the "Company Legislation" database in Lotus Notes.

The terminology for employee qualifications for work on electrical equipment is taken from Government Regulation No. 194/2022 Coll. An overview is provided in Chapter 5 of this directive.

Safe distance - distance beyond the approach zone boundary.

Proximity to voltage - the space between the boundaries of the protective space and the approach zone.

Electrical equipment - equipment designed for the generation, transmission, conversion, distribution, and use of electrical energy, and equipment designed to protect against the effects of atmospheric or static electricity.

Electrical hazard - a source of possible injury or damage to health caused by electrical energy.

Local distribution system - an interconnected set of 110 kV lines and equipment (with the exception of selected 110 kV lines and equipment that are part of the transmission system) and lines and equipment with a voltage of 0.4/0.23 kV, 3 kV, 6 kV, 10 kV, 22 kV and 35 kV, or other voltage levels, used to distribute electricity in a defined area of the Czech Republic, including measuring, protection, control, security, information, and telecommunications systems. The LDS is not directly connected to the transmission system (TS).

Local distribution system SPOLANA s.r.o. - an interconnected set of 110 kV lines and equipment and 0.4/0.23 kV lines and equipment, 6 kV, or other voltage levels, used to distribute electricity within the territory of SPOLANA s.r.o. and to other customers outside the SPOLANA s.r.o. premises (to whom distribution is provided on a contractual basis), including measurement, protection, control, security, information, and telecommunications systems.

Installation of electrical equipment – establishment of new equipment and reconstruction of existing equipment.

Government Regulation No. 194/2022 Coll. – Government Regulation on requirements for professional competence to perform work on electrical equipment and professional competence in electrical engineering.

Operation and work (according to ČSN EN 50110-1 ed. 3) - includes all work activities related to putting electrical equipment into operation; includes tasks such as switching, control, monitoring, maintenance, as well as work on electrical equipment and non-electrical work.

Operation of electrical equipment - tasks related to the operation of electrical equipment, e.g., switching, regulating, reading data from permanently installed devices, etc.

Protective space - the space around live parts, which may not be entered without protective measures being taken (see Figs. 1 and 2 of Annex 3 to this Directive).

Human Resources Department – the human resources department of ORLEN Unipetrol RPA s.r.o., which provides specific human resources/payroll activities for SPOLANA s.r.o. on a contractual basis.

Workplace - an area designated for work on or near electrical equipment.

Work on or near electrical equipment - activities such as measurement with portable devices, testing, inspection, maintenance, replacement of components, reconstruction, assembly, all tasks to secure and unlock the workplace, etc.

Work according to instructions - the most necessary instructions are issued for the activity. Each worker is responsible for complying with occupational safety conditions.

Work under supervision - detailed instructions are provided for the activity. The person performing the supervision checks the safety measures taken before the start of work and, during the work, checks compliance with safety regulations as necessary. Each worker is responsible for complying with occupational safety conditions.

Work under supervision - the activity is performed under the constant supervision of an authorized person who is responsible for compliance with safety regulations, work procedures, and the use of prescribed protective equipment and work aids.

Inspection during operation – an activity in which, while maintaining safe distances from live parts, a visual or even auditory inspection of the equipment is performed to determine its condition.

Electrical operations - ensures the handling of entrusted electrical equipment at the Energy and Water Management plant.

Internal operator - a company department at management level N-2 (see R-4.2.1) that has electrical equipment in its accounting records, uses it, and is responsible for its proper and safe operation.

Employees - employees of SPOLANA s.r.o. or employees of an external company authorized by SPOLANA s.r.o. to perform activities on its electrical equipment

Electrical equipment operating rules - for the purposes of this directive, this is a regulation that sets out the basic safety, work, and operating rules for the operation of MV, LV, HV, and VHV electrical equipment.

Order "B" - a written document on the technical and organizational measures ordered to ensure the safety of persons working on or in the vicinity of MV, HV electrical equipment (see Appendix No. 7 to this directive for a sample).

Inspection of electrical equipment - a set of activities involving inspection supplemented by necessary measurements and testing to determine whether the equipment complies with applicable standards and regulations with regard to the safety of persons against injury and property against damage or destruction.

Risk - a combination of the probability and degree of possible injury or damage to the health of a person exposed to a risk or risks.

Maintenance of electrical equipment - all types of repairs, cleaning, troubleshooting, and fault removal of electrical equipment, including measurements and tests of their functional condition performed as part of planned maintenance or emergency maintenance.

- a person entrusted with ultimate responsibility for work activities and compliance with occupational safety conditions. Only one work supervisor may be appointed for each activity, even if it is performed by multiple work groups of the company's own employees and also by employees of external legal entities and individuals with their own work group supervisors, based on contractual arrangements for the activities in question.

Work group leader – a person responsible for the work activities of the group. If he/she is not appointed as the work supervisor for a given activity, then during the work activities on or near the relevant electrical equipment, he/she is directly subordinate to the work supervisor or the person performing supervision.

Manager - for the purposes of this directive, a manager at management level N-2 (see R-4.2.1).

Act No. 250/2021 Coll. – Act on occupational safety in connection with the operation of designated technical equipment and on amendments to related acts.

Employee performing safety measures - an employee with the appropriate qualifications according to Government Regulation No. 194/2022 Coll. (at least a knowledgeable person), authorized in writing by the person responsible for the technical condition of the electrical equipment.

Approach zone - the area surrounding the protective space (see Figs. 1 and 2 of Annex 3 to this Directive).

Live part of electrical equipment - any conductor or conductive part of electrical equipment that is live under normal operating conditions.

13.2 Explanation of abbreviations

AC - alternating current
BI - safety instructions DC
- direct current
LDS - local distribution system
PrŘ - operating rules (for electrical equipment)
PPE - personal protective equipment - equipment designed for the individual protection of persons, the use of which prevents or reduces the effects of dangerous and harmful factors (risks) in the work process
mn - low voltage (up to and including 50V)
nn - low voltage (above 50V to 600V inclusive to ground, above 50V to 1,000V inclusive between phases)
HV - high voltage (above 0.6kV and less than 30 kV to ground, above 1kV and less than 52 kV between phases)
EHV - extra high voltage (from 30kV and less than 171 kV to ground, above 52kV and less than 300 kV between phases) EVH - Energy and Water Management Plant

14 FINAL PROVISIONS

14.1

If the provisions of this directive concern equipment (both production and non-production) controlled by operators whose activities are described in the operating rules for electrical equipment, work instructions, or safety instructions, the obligations arising from this directive must also be specified in these instructions. The heads of departments/plants where this documentation is issued are responsible for incorporating these obligations into the above-mentioned documentation.

14.2

The work instructions (PI) for electrical equipment are valid until their next revision, when they will be converted into operating rules (PrŘ) for electrical equipment within the meaning of Annex 6 to this directive.
This transformation of WIs into ORs for electrical equipment will be carried out during the next revision of these documents, no later than December 31, 2024.

14.3 Familiarization with this directive

All employees and managers of SPOLANA
s.r.o. involved in working on and operating electrical equipment.

15 LIST OF APPENDICES

Appendix No. 1 - Electrical hazards during work on electrical equipment and in its vicinity Appendix No. 2 - Rules for issuing a "B" command
Appendix No. 3 – Distances
Appendix No. 4 - Certificate of passing the examination of professional competence to perform activities in electrical engineering pursuant to Government Regulation No. 194/2022 Coll.
- Protocol on the examination of professional competence to perform activities in electrical engineering pursuant to Section 9 of Government Regulation No. 194/2022 Coll.
Appendix No. 5 - Authorization for an employee (sample form)
Appendix No. 6 - Operating rules for low-voltage, medium-voltage, and high-voltage electrical equipment
Appendix No. 7 – Sample title page of the “B” order book, sample “B” order form
Appendix No. 8 – Application for a professional competence examination pursuant to Government Regulation No. 194/2022 Coll. (sample form) Appendix No. 9 – Record of instruction and verification of knowledge pursuant to Section 4 of Government Regulation No. 194/2022 Coll. (sample form)

ELECTRICAL HAZARDS WHEN WORKING ON ELECTRICAL EQUIPMENT AND IN ITS VICINITY

Electrical hazard is the possibility of injury or death to a person from electrical equipment. The extent of the electrical hazard is directly dependent on the electrical risk posed by electrical energy, or the general risk posed by a combination of related equipment and activities (mechanical risk, risks from the surrounding work environment, etc.).
Therefore, in accordance with the provisions of the ČSN EN 50 110-1 ed. 3 standard, it is necessary to perform an electrical hazard analysis to ensure safe operation on and near electrical equipment (operation and work).

BASED ON THE EVALUATION OF THE ELECTRICAL HAZARD ANALYSES PERFORMED, THE FOLLOWING MUST BE DETERMINED:

- Electrical engineering qualifications and the number of persons required to operate the relevant electrical equipment.
- Electrical engineering qualifications and numbers of persons for individual types of work on electrical equipment and in its vicinity.
- Work procedures, including safety measures for individual types of activities (determining the method of work according to instructions or under supervision or oversight).

AN ANALYSIS OF ELECTRICAL HAZARDS MUST BE PERFORMED BASED ON AN EVALUATION OF THE FOLLOWING FACTORS:

- Nominal voltage of the relevant electrical equipment (low voltage, medium voltage, high voltage, extra-high voltage).
- Basic protection method.
- Method of protection in case of failure.
- Level of electrical qualification of persons performing activities (operation and work) on or near electrical equipment.
- Method of performing work, i.e., on electrical equipment without voltage, near voltage, or under voltage.
- Combination of other risks related to the activity (e.g., movement of assembly platforms, work at heights, etc.).

After performing electrical hazard analyses, the person responsible for the technical condition of the electrical equipment must propose and approve procedures for individual activities in accordance with the provisions of this directive.

Electrical hazard analyses and work procedures may be included in safety instructions, operating rules, work permits, or "B" orders (see S-3.15.2, S-3.16.1, S-3.11.5, and S-3.17.8).

ANALYSIS OF ELECTRICAL HAZARD RISKS AT LV, HV, AND VHV DISTRIBUTION STATIONS AT SPOLANA s.r.o.

Electric shock – LV electrical equipment (contact with live or non-live parts with dangerous voltage) Measures:

- Ensure that the prescribed tests, checks, and inspections are carried out during operation.
- Ensure that any faults found are rectified in a timely manner.
- Ensure that electrical equipment that poses a threat to the life or health of employees is disconnected and secured.
- Ensure the professional development of employees authorized to operate and work on electrical equipment.
- Allow access to the electrical station area only to employees who are demonstrably capable of avoiding the dangers that electricity can create (Sections 6-8 of Government Regulation No. 194/2022 Coll.).
- Organize work safety in accordance with ČSN EN 50110-1 and TNI 343100 (supervision, oversight, person responsible for electrical equipment, work supervisor).
- Limit work under voltage to necessary cases only (securing the workplace, verifying the voltage-free state).
- When working near live parts, ensure protection against accidental contact.
- When working without voltage, ensure that the workplace is properly secured.
- Ensure that the substation is equipped with the necessary PPE and work aids, and ensure that their condition and use are checked.

Electric shock – high-voltage and extra-high-voltage electrical equipment (contact with live or non-live parts with dangerous voltage)
Measures:

- Ensure that prescribed tests, checks, and inspections are carried out during operation.
- Ensure that any faults detected are rectified in a timely manner.
- Only authorize persons with the appropriate professional qualifications to operate and work on electrical equipment (Sections 6–8 of Government Regulation No. 194/2022 Coll. for the scope marked E1A).
- Ensure the professional development of employees authorized to operate and work on electrical equipment.
- Allow access to electrical substations only to employees who are demonstrably capable of avoiding the dangers that electricity can create (Sections 6–8 of Government Regulation No. 194/2022 Coll. for the scope designated E1A).
- Equip employees with appropriate PPE and work aids.
- Ensure that electrical stations are equipped with the necessary PPE and work aids, and ensure that their condition and use are checked.
- Limit work under voltage to only necessary cases (securing the workplace, verifying the absence of voltage).
- When working near live parts, ensure protection against accidental contact.
- When working without voltage, ensure that the workplace is properly secured.

Burn injury from electric arc Measures:

- Ensure that electrical stations are equipped with the necessary PPE and work aids, and ensure that their condition and use are checked.
- Ensure that low-voltage switches for transformer outlets on high-voltage switches are blocked.
- Equip workers with appropriate PPE and work aids.
- When working near live parts, ensure protection against accidental contact.
- In the case of open live parts of switchboards, secure electrical equipment against falling tools.

Electric shock during non-electrical work Measures:

- Organize work safety in accordance with ČSN EN 50110-1 using TNI 343100 and this directive (work supervisor, order "B", supervision, oversight).

RULES FOR ISSUING ORDER "B"

1
OBLIGATION TO ISSUE ORDER "B"

Order "B" must be issued (except in the cases specified in paragraph 2 of this annex) for the following activities:

- to secure and unlock the workplace for work without voltage on medium and high voltage equipment,
- for work on medium-voltage and high-voltage equipment on live parts (protective space - see Annex 3 to this Directive) or in the vicinity of live parts (approach zone - see Annex 3 to this Directive),
- for work on low-voltage and extra-low-voltage equipment in the event of a risk of induction from medium-voltage and high-voltage equipment (intersections, parallel lines, etc.),
- for work on low-voltage electrical equipment if it is located in common areas with medium-voltage and high-voltage equipment and there is a risk from this medium-voltage and high-voltage equipment,
- for work on switched off and otherwise unsecured MV and HV equipment.

2
CASES OF WAIVER FROM ISSUING ORDER "B"

An order "B" may be waived in the following cases:

- if there is a risk of delay in the event of malfunctions in an emergency operating condition, in the event of a threat to human life or the risk of major economic damage,
- for work on electrical equipment under construction that has not yet been connected to voltage and is not located near live parts and is not galvanically connected to a live network,
- for work on electrical equipment that is frequently repeated. Precise local work and safety regulations must be issued for this work, which must clearly indicate that they replace order "B". Knowledge of these regulations is checked through repeated training at intervals determined by the person responsible for the electrical equipment (i.e., from the EVH electrical plant).

3
AUTHORIZATION TO ISSUE ORDER "B"

Only a person with the appropriate qualifications, at least in accordance with Section 6 of Government Regulation No. 194/2022 Coll., authorized in writing by the head of the EVH electrical plant (see Appendix No. 5 of this directive for the form of authorization), may issue (execute) an "B" order.

A list of these persons, authorized by the head of operations at the EVH electrical plant, is available at the main electrical control room of the Energy and Water Management plant (C2440) and at the relevant medium-voltage substation.

Notice for exhibitors!

- The workplace shall be secured by one person with qualifications at least in accordance with Section 6 of Government Regulation No. 194/2022 Coll. In the case of complex operations, two persons with qualifications at least in accordance with Section 6 of Government Regulation No. 194/2022 Coll. shall be required.
- If it is necessary to perform exceptional work on parts under medium voltage, the command "B" must be written and marked in red

CAUTION, WORK UNDER VOLTAGE!

4
PERSONS TO WHOM ORDER "B" IS ISSUED

- The person (work supervisor) securing and unlocking the workplace for work on the equipment.
  Note: If a person authorized to issue a "B" order has to work on electrical equipment alone, they must issue a "B" order to themselves before starting work.
- For the supervisor of work at a secured workplace.
- For a person supervising work on electrical equipment or in the vicinity of live parts.

When performing work activities on medium-voltage electrical equipment, employees of other legal entities or natural persons (based on a contractual relationship) must be notified by the sending company of the name of the work supervisor or work group leader, or supervisor, and a copy of a valid certificate proving their qualification to perform such work (the workplace shall be secured by persons authorized by the person responsible for the operation of the electrical equipment, or, upon agreement, they shall also ensure supervision of the work).

5
REQUIREMENTS OF ORDER "B"

- Order "B" consists of the original and a copy with matching numbering. Any erasures, corrections, rewrites, or deletions are prohibited in order "B," with the exception of pre-printed text when selecting one of the options listed.
- After filling in all the details required to start work, a copy of order "B" is torn out of the book and the work supervisor posts it at the workplace.
- After completion of the work, the original copy of order "B" remains in the order book "B," and the copy is retained by the executing organization.
- After the "B" order book has been completed, the books are filed with the EVH electrical plant foreman for a minimum of one year after the last "B" order has been closed.
- If an extraordinary event occurred during the work, order "B" is filed with the EVH Electrical Plant Operations Manager for a period of 5 years.
- An "B" order is issued for only one workplace and one work group and is valid for up to 24 hours.
- The validity of order "B" begins from the moment when the work supervisor or designated supervisor takes over the workplace and signs order "B."
- Where the work supervisor secures the workplace himself, order "B" is valid from the moment he gives the order to commence work.
- The validity of order "B" ends with its written termination in accordance with paragraph 8 of this annex.
- If several groups are working at one workplace, the operator must appoint only one work supervisor responsible for the joint management of all activities at the workplace.
- For long-term work, where the equipment remains permanently disconnected and secured and where there are no changes throughout the entire period of work, order "B" may be issued for a longer period, but for no longer than one week (calendar week, i.e., until Sunday at the latest). In this case, the work supervisor is obliged to check every day before giving the order to start work whether there has been any change in the securing of the workplace and to make a record of this in order "B". At the same time, a record of the interruption of work is also made here.
- If several groups are working on the equipment at several workplaces, the employee designated by the internal operator is obliged to record all "B" commands in one place, from where the command to switch on can only be given.

6
SECURING THE WORKPLACE

The securing shall be carried out by personnel authorized by the EVH Electrical Plant Operations Manager (see Chapter 10 of this directive) by disconnecting the equipment after switching it off by moving the switch to the repair position, or by switching off the disconnectors and circuit breakers on all sides of the possible power supply and control.

- The securing must be carried out first at the point from which the equipment is currently powered (in the main switchboard). Appropriate safety signs shall be displayed at the points from which the equipment is switched off (controlled) and at points where reverse current is possible.
- A suitable tester shall be used to verify that all parts of the equipment to be worked on are de-energized. After verifying that the equipment is de-energized, short-circuiting shall be performed in the prescribed manner by installing a short-circuiting kit or by engaging the appropriate short-circuiter.
- The issuance of a "B" command may be waived in cases where a special regulation has been developed for securing. Securing shall be recorded in the substation's operating log.

7
START OF WORK

- After completing the safety measures, the safety officer and the work group leader shall check whether all necessary safety measures have been taken at the workplace. Only then will the securing person allow the work group to enter the workplace, familiarize them with the condition of the equipment, and confirm that it is de-energized by directly touching the secured part of the equipment. They will confirm this with their signature on order "B."

- The work leader and all members of the work group then confirm their acceptance of the workplace by signing order "B".

- IT IS PROHIBITED TO ISSUE PERMISSION TO START WORK AT A PRE-AGREED TIME AND TO SPECIFY THE TIME WHEN THE EQUIPMENT WILL BE DISCONNECTED!

8
COMPLETION OF WORK, HANDOVER OF THE WORKPLACE AND INSPECTION OF THE WORK PERFORMED

- The necessary tests on the equipment being worked on must still be carried out on the secured equipment. Only those safety devices that would prevent the tests from being carried out may be removed. This mainly involves the removal of short-circuiting devices so that the insulation resistance can be measured and the necessary functional tests can be carried out during the planned work at the secured workplace. Barriers (fences) and safety signs must remain in place. In such cases, the work group leader must cooperate with the authorized employee of the EVH electrical plant, who will dismantle and reassemble the short-circuiting device on his instructions.

- If the workplace is not handed over after the tests have been completed, the equipment must be secured again in the same way as before the tests. This securing is carried out jointly by the authorized employee of the EVH Electrical Plant in cooperation with the work group leader, with the authorized employee of the EVH Electrical Plant being responsible for the work procedure and method of securing, who must make a record of the performed tasks in order "B".

- The work shall be completed and the workplace handed over in such a way that, after completion of the planned work, including functional tests, the work group shall prepare the equipment on which it has been working to an operational condition. Tools and materials shall be tidied away. The work group leader shall inspect the workplace, check that all members of his work group are present, and instruct them to leave the workplace.

- Then, they will ask the authorized employee on duty at the EVH electrical plant to take over the workplace and, together with them, visually check the condition of the equipment on which the group has been working. After the inspection is complete, both will confirm the operability of this equipment with their signatures on order "B."

- Finally, the authorized employee of the EVH Electrical Plant operation unlocks the equipment and puts it into standby mode. He confirms this status with his signature on order "B," thereby closing the order.

- The commissioning of the equipment into standby or operational status must be recorded by the authorized employee of the EVH electrical plant in the substation's operating log.

9
ORDER "B" – METHODOLOGY FOR COMPLETION (COMMENTARY)

Orders "B" are used in cases where electrical equipment is secured and handed over in a de-energized state to a work group that takes over the equipment as a secured workplace.

This involves the following work:

a) on electrical equipment in the vicinity of live parts, e.g., inspection or repair of a medium-voltage cabinet, inspection or repair of one section of a medium-voltage substation, adjustment and inspection of protections, connection or disconnection of a medium-voltage cable from a cabinet
b) on live electrical equipment (on parts that are switched off but otherwise unsecured).

Orders are always issued in writing and addressed to the head of the work group. Orders may only be issued by employees who have been authorized in writing to do so (see the list of these employees at the main electrical control room of the Energy and Water Management plant and at individual high-voltage substations).

PARAGRAPH I

In the section "For the supervisor, supervisor," delete what does not apply and add the name of the person.

In the section "To secure the workplace, switch off and secure," add what is to be secured and briefly describe the method of securing (switching off, verifying that there is no voltage, grounding and short-circuiting points, fencing off the workplace, placing safety signs). If handling procedures have been developed for securing the relevant parts, then the method of securing is not prescribed and the procedures according to which the securing is to be carried out are written.

In the section "Safety measures to be taken," the name of the electrician designated by the employee issuing the order to be responsible for work safety at the workplace shall always be entered in line 1. The electrician listed in line 2 is considered a subordinate within the scope of the order. When working, the subordinate performs work under the supervision of the person responsible for work safety.

PARAGRAPH II

The table shall be filled in with the serial number of the manipulation, the designation of the substation and the outlet number (cubicle, field, or cabinet), the time of manipulation, a description of the manipulation, and who performed the manipulation.
The following shall be recorded: - switching off the switch

- switching off the control, air
- removal of the trolley (switching off the disconnectors)

The number of short-circuiting kits used and their location shall be entered in the last row of the table. Tasks related to securing the workplace that were performed in other substations shall also be recorded. The method used to determine the voltage-free state shall be entered below the table.
Other tasks (posting safety signs, demarcating the workplace, instructing persons, etc.) shall be recorded in the "Other safety measures" column.
The nearest live parts are written on the last line of the paragraph.

PARAGRAPH III

- The electrician who secured the electrical equipment is always responsible for convincing the group that the workplace is de-energized. They do this by directly touching the secured parts.
- Members of the work group shall legibly write their names before signing.

PARAGRAPH IV

- The workplace shall be inspected after the end of work by the work supervisor or supervisor and the electrician on duty.
- The supervisor (supervisor) is responsible for the proper completion of the work and cleaning of the workplace.
- The electrician on duty who took over the workplace after the work was completed shall record the condition in which he subsequently left it (e.g., unlocked and put into operation, or short-circuit kits dismantled, switch in test position, control voltage switched off, etc.).

PARAGRAPH V

- Consistently record the handover and takeover of the secured workplace in the relevant books.

PARAGRAPH VI

- Changes are made by the electrician on duty in the presence of the work supervisor.
- A change is understood to mean, in particular, the release of the workplace for the purpose of measuring the insulation condition of the equipment, testing protections, etc.

PARAGRAPH VII

- Changes in the composition of the working group are only permitted for serious reasons (e.g., the person is dismissed, feels unwell, etc.).

PARAGRAPH VIII

- This part of the order is only filled in if the work lasts longer than 24 hours, with the order being valid until the end of the calendar week (until Sunday) at the latest.

DISTANCES

The distance from live parts is a basic condition for determining work procedures. These distances are derived from Figures 1 and 2 and Table 1.

Figure 1 - Air distances and zones for work procedures

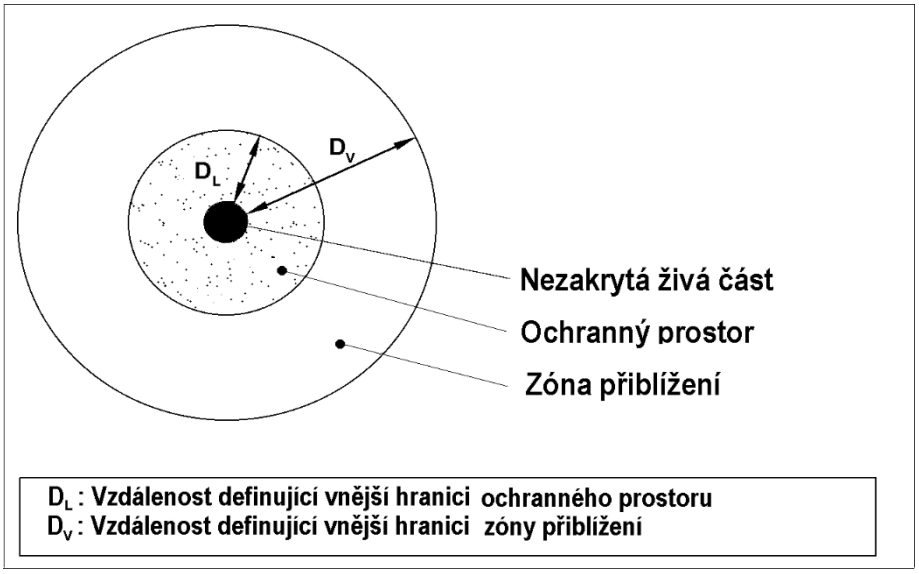
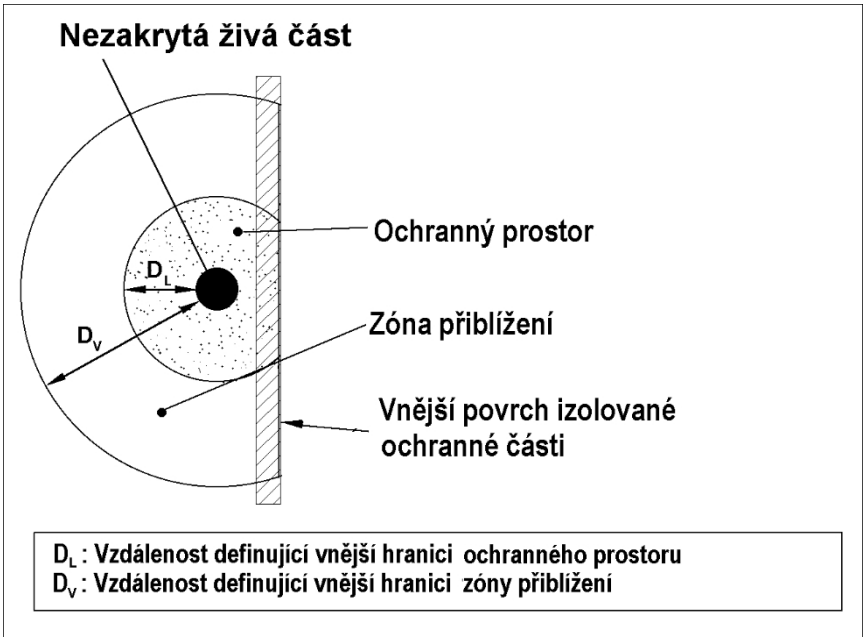


Figure 2 - Delineation of the protective space using an insulated protective part



- **A distance greater than the Dv value is a safe distance.**
- **The space at a distance greater than $_{DL}$ and less than $_{Dv}$ (the circle in Figures 1 and 2) is for work near live parts.**
- **The space at a distance less than the $_{DL}$ value is for work under voltage.**

Table 1

Nominal voltage $_{UN}$ (kV)	Maximum voltage for equipment Effective value (kV)	Outer boundary of the $_{DV}$ approach zone (mm)	Outer boundary of the protective space $_{DL}$ (mm)
Up to	1	300	No contact
Above 1 to 10	12	1150	120
110	123	2000	100

NOTES:
For medium and low voltage, the outer boundary of the protective space is the live part itself, provided that appropriate PPE, aids, and tools are used, i.e., without direct contact with any part of the worker's body. Approaching live parts without touching them is, in this case, working in the vicinity of live parts. If the live parts are separated by barriers made of insulating material, it is possible to approach the barriers until they are touched (see Figure 2).

ACTIVITIES IN THE VICINITY OF LIVE EQUIPMENT

- The proximity to voltage for individual activities can be determined by the person responsible for the electrical equipment within the range of distances $_{DL}$ to $_{DV}$ (see Table 1).

1. Basic distances

- It is recommended to use the basic distances according to our current national practice (see Table 2 of this annex). These distances are within the approach zone range according to ČSN EN 50110-1 ed 2.

Table 2

Alternating voltage (kV)		Distance (mm) for equipment		Approach zone range (mm)
Nominal	Maximum	Indoor	External	
Up to 10	12	450	500	120 – 1150
110	123	1400	150	1000 – 2000

This work may be performed by:

a) a person trained under the supervision of a chief electrical engineer
b) an electrician under the supervision of the chief electrician
c) the chief electrical engineer alone.

2. Reduced distances

- When working on equipment near live parts under voltage, where it is not possible to maintain the distances specified in Table 2 of this Annex and the equipment cannot be switched off for serious reasons, the distances specified in Table 3 of this Annex must be maintained.
- These reduced distances, derived from our current national practice, are also within the approach zone range.
- This work is always carried out under supervision, i.e. it must be performed by at least two people, including at least one electrician under the supervision of a senior electrician. The condition of performing work under supervision also applies if the distances are reduced to the limit of the approach zone.

Table 3

Alternating voltage (kV)		Distance (mm) for equipment		
Nominal	Maximum	Indoor	Outdoor	Approach zone (mm)
up to 10	12	250	30	120 – 1150
110	123	100	110	100

Certificate of passing the examination of professional competence to perform activities in electrical engineering according to Government Regulation No. 194/2022 Coll.

Document registration number: *SPOLANA s.r.o.*

First and last name:

Personal number:

Date and place of birth:

Permanent address:

Employed as:

Length of experience:

Successfully passed the examination of professional competence to perform activities in electrical engineering in the scope of:

[1] Scope of professional competence:

[2] Definition of the scope of professional competence:

[1] For persons with knowledge, one of the following options is specified in the scope of professional competence

- *up to 1 kV alternating voltage or 1.5 kV direct voltage*
- *without voltage limitation, and one of the following options*
- *equipment in buildings without explosion hazard*
- *equipment in buildings with explosion hazard*

[2] The scope of professional competence is specified for knowledgeable persons whose professional qualifications have been determined by the responsible person to be sufficient for the given scope of activities, or in cases where the chair of the examination committee has limited the scope of professional competence.

_____ _____

chair of the examination committee ***responsible employee and organization stamp***

In Neratovice on: Valid until:

Protocol
On the examination of professional competence to perform activities in electrical engineering pursuant to Section 9 of Government Regulation No. 194/2022 Coll.

Reference number: *SPOLANA s.r.o.*
Personal number:
First and last name:
Date and place of birth:
Permanent address:
Employed as:
Electrical education attained:

As of today, I have taken the above-mentioned exam
Written exam evaluation:
Oral exam questions:

1-
2-
3-
4-
5-
6-
7-
8-
9-
10-

Overall assessment of the exam:

Examination committee: ***Chair: ……..…….....***

1. Committee member: ……..…….

2. Committee member: ……..…….

Signature of examinee: ……..…….

In Neratovice on:

SAMPLE

SPOLANA s.r.o. Neratovice
Plant/Operation

Authorization for employee:

First and last name	Date of birth	Personal number / Company	Position	Signature

Pursuant to the provisions of Government Regulation No. 194/2022 Coll. and the requirements of ČSN EN 50110-1 ed. 3, TNI 34 3100, and S-3.16.1, I hereby authorize you to perform the following activities:

a)
b)
c)

Date of issue:	Issued by: name and position	Signature

SPOLANA s.r.o. Neratovice
Plant/Operation

Authorization for employee:

First name and surname	Date of birth	Personal number / Company	Position	Signature

Pursuant to the provisions of Government Regulation No. 194/2022 Coll. and the requirements of ČSN EN 50110-1 ed. 3, TNI 34 3100, and S-3.16.1, I hereby authorize you to perform the following activities:

a)
b)
c)

Date of issue:	Issued by: name and position	Signature

Operating rules for low-voltage, medium-voltage, and high-voltage electrical equipment

1
Formal layout and requirements

1.1
These operating rules have a uniform "Title page," the binding form of which is specified on page 4 of this appendix. The title page contains the signatures of the approvers with dates.

From the second page onwards, only the identification of the document must be ensured (at the top of the page - instead of the header):
- on the left side, the revision number,
- On the right-hand side, the PrŘ number; for attachments, the attachment number to PrŘ and the page number shall be indicated (individual attachments are numbered separately, pages are numbered consecutively with the total number of pages indicated - e.g. 1 of 2).

The PrŘ designation (number) is according to the code "PrŘ XX-YY", where:
- XX - the first two digits determine the departmental affiliation and are identical to the first two digits of the accounting center number in SAP
- YY - the second two digits are the serial number of the PrŘ in the department

Example: Energy and Water Management Plant PrŘ 38-01

1.2
The content of PrŘ is listed on pages 2 and 3 of this appendix.
Depending on the nature of the electrical equipment issue being addressed, the processor (manager) may limit the scope (in cases where the chapter in question does not relate to the issue being addressed).

2
Preparation of the PrŘ

2.1
Drafting of the PrŘ

Prepared by - for the EVH plant, the person responsible for the operation of electrical equipment in accordance with paragraph 9.1 of this directive
- for other plants/departments, the person responsible for the technical condition of electrical equipment pursuant to Section 9.1 of this directive (hereinafter referred to as the "draftsman").

2.2
Commentary procedure for the Rules of Procedure

The processor shall send the draft PrŘ for comment, with the following participants:
- the head of the Environment Department,
- the head of the Safety Department,
- Fire and accident prevention specialist (HZSP department),
- Head of Electrical Operations,
- Director of the Centralized Maintenance Department.

Any other commentators shall be designated by the senior employee supervising the processor.

Note: In the case of PrŘ exceeding the scope of the processing department, it is necessary to include the departments concerned (to which the described activities relate) in the comment procedure when revising this documentation.

Based on the comments received, the processor shall make any necessary adjustments to the draft PrŘ. Controversial comments shall be discussed with the participation of the relevant managers (the processor and the commentator). The processor of the PrŘ shall make a record of the outcome of the discussion of controversial comments, which shall be signed by the employees involved. The processor shall then reflect the outcome of the discussion in the text of the PrŘ.

2.3
Preparation of the final draft of the Rules of Procedure

After resolving all comments, the author prepares the final draft of the PrŘ.

Note: During the transition from the existing work instructions to the new PrŘ, a derogation clause shall be included in the chapter "Final Provisions": "These operating rules repeal and replace PI No. ....."

3
Approval of the PrŘ

The processor shall submit the final draft of the PrŘ (original) for review and approval (signature) to the relevant employees listed on the "Title Page" of the PrŘ (see page 4 of this annex).

4
Distribution of the Rules

4.1
Based on the signed (approved) original, the processor ensures the distribution of numbered copies of the PrŘ according to the distribution list specified by the head of the internal operator's department, which is listed in the PrŘ.
A copy of the PrŘ shall always be received by:

- the head of the issuing department of the internal operator,
- the head of the Environment Department,
- the head of the Safety department,
- the head of the Electrical Engineering department,
- the director of the Centralized Maintenance department,
- person responsible for the technical condition of the relevant electrical equipment.

The distribution of other copies is carried out in such a way that the PrŘ is always available to the operators at the given workplace and that they are demonstrably familiar with it.

The PrŘ is distributed strictly against the signature of the addressee (on the list of persons who have received a copy).

4.2
The use of uncontrolled copies of PrŘ is not permitted.
In justified cases, the head of the department may authorize the use of additional controlled copies, but is obliged to:

- keep a list of persons who have received a copy,
- mark the copy with a serial number and date and authorize it with a signature,
- ensure that these copies are updated in accordance with paragraph 4.1 when revising the PrŘ.

5
Contents of the Operating Rules for MV, LV, HV, and VHV Electrical Equipment
---

1. Technical description of the substation
   - 1.1 Basic functions of the substation
   - 1.2 Description and technical parameters of the substation
     The type, technical parameters (voltage system, rated voltage, rated current, rated dynamic current, rated breaking current, auxiliary voltages), description of individual terminals, power supply points for auxiliary voltages are specified.
   - 1.3 Description of auxiliary substation equipment (fault, terminal block, signaling, measuring switchboards, and amplifier sets).
   - 1.4 Substation layout

2. Control and blocking
   - 2.1 Control
     The method of control of individual output elements (switches, disconnectors) in inputs, outputs to other substations, motors, transformers) is specified.
   - 2.2 Blocking
     This section describes the individual types of interlocks for switches, disconnectors, and protections.

3. Measurement, protection, and signaling
   - 3.1 Measurement
     Description of local and remote measurement.
   - 3.2 Protections
     Description of current, voltage, ground, flash and other types of protection. Setting protection in individual outlets.
   - 3.3 Signaling
     The method of local and remote signaling of statuses and faults is specified.

4. Personal protective equipment (PPE) and work aids
   - 4.1 Definition of personal protective equipment and work aids.
   - 4.2 List of personal protective equipment and work aids at the substation, including safety signs.
   - 4.3 Condition of PPE and work equipment.
   - 4.4 Inspection of PPE and work equipment before use.
   - 4.5 Use of PPE and work equipment for individual tasks.

5. Binding conditions for the proper operation of the substation
   - 5.1 Analysis of electrical hazards
   - 5.2 Handling in the substation
   - 5.3 Telephone or radio communication
   - 5.4 Work on medium-voltage equipment
   - 5.5 Records of operations performed in the substation
   - 5.6 Order B
   - 5.7 Special local work and safety regulations replacing order "B"
   - 5.8 Securing the workplace
   - 5.9 Commencement of work
   - 5.10 End of work, handover of the workplace, and inspection of the work performed.

6. Basic operating conditions of the substation and handling procedures
   - 6.1 Basic operating condition of the substation
   - 6.2 Other operating conditions of the substation
   - 6.3 Handling procedures – competencies
   - 6.4 Procedures for switching on and off inputs and outputs
     The procedures for switching on/off switches and disconnectors are described, as well as inserting and removing switches on a trolley in cabinet switchboards, or replacing high-voltage fuse cartridges stored in removable insulating sleeves in the cabinet superstructure.

7. Method of securing and unlocking the workplace
   - 7.1 Securing supply panels and cabinets
   - 7.2 Securing output fields, cabinets – at secondary substations
   - 7.3 Securing output panels, cabinets – on transformers
   - 7.4 Securing output panels, cabinets – on motors
   - 7.5 Securing part of the substation
   - 7.6 Securing the entire substation
   - 7.7 Securing the workplace
   - 7.8 Remediation of equipment.

8. Regular operation
   The frequency of regular rounds and activities during rounds are specified.

9. Records
   An overview of all entries made by the operator in the inspection, handling, and short-circuiting kit logbook is provided.

10. Change sheet
    An overview of the latest revisions of pages or chapters (subchapters) is provided, i.e., revisions that have a number other than 0.

11. Final provisions
    For example: "These operating rules cancel and replace ..."

12. Distribution list

Appendix No. 1 – Connection diagram (e.g., single-pole diagram of the substation)

TITLE PAGE OF THE OPERATING RULES – *template*

SPOLANA s.r.o. Neratovice	OPERATING REGULATIONS ELECTRICAL EQUIPMENT	No. PrŘ XX-YY Old number: e.g. Pl-xx

Operating rules

For:
. . . . . .

Prepared by: ..... on .....

Technical accuracy verified by:

..... on .....
Head of the Environment Department

..... on .....
Head of the Security Department

..... on .....
Head of Electrical Operations

..... on .....
Director of Centralized Maintenance

..... on .....
Person responsible for the technical condition of electrical equipment (according to S.3.16.1, paragraph 9.1)

Approved by: ..... on .....
Director / Plant Manager / Department Manager (internal operator)

copy no. / rev. no.

Effective from:

Date:

SAMPLE

BOOK OF ORDERS "B"

FOR DISTRIBUTION: r

Established: _____

Closed: _____

Authorization of print:

_____

Electrical operation book no.

Electrical facility no. _____

PŘÍKAZ B

číslo příkazu :_____/page 1

for the supervisor. Supervision: _____on: _____20____

from _____to _____with a group of workers consisting of _____ performed the following work:

_____

_____

1

To secure the workplace, the following will be turned off and secured: _____

_____

_____

The following will remain: _____

The following will be secured: 1. _____ Name _____(signature)

2. _____ Name _____(signature)

Order issued in writing on _____V _____ at _____ (signature)

Workplace secured on all sides on as follows:

Ref. no. manipulation	distribution station/ output	time	description of handling	performed (
Short-circuit kits		kS		

Method of checking the voltage-free state: _____

Additional safety measures: _____

_____

Nearest live parts:

The secured workplace was checked together with the work supervisor or supervisor, and the work group was convinced of the voltage-free state of the electrical equipment: _____ (signature)

Secured workplace and order B taken over on: _____ at _____ at

and responsible for the further safety of the group's work _____ (signature)

We confirm with our signatures that we were familiarized with the conditions for safe work

and the condition of the workplace: _____

_____

_____

IV.

Work completed, workplace and electrical equipment checked by the work supervisor or supervisor and electrician on duty

Workplace handed over by: _____ (signature), taken over by: _____ (signature)

on: _____V_____ at

The equipment was put into the following condition: _____

TURNOVER

tent2

V. The handover and takeover of the secured workplace for which order B was issued must be recorded by the inspection electrician in the operating logbook of the relevant workplace during the shift change.

VI. Changes in workplace security for the purposes of training and examinations:

Date	Time	Change				To the original state	
		Reason	place	action	signature	time	signature

VII. Changes in the composition of the working group during the course of the work:

Employee leaving				Employee arriving				
Name	Date of departure	Time	Signature Group leader	Name	date of arrival	tas	signature	signature group leader

VIII Interruption and continuation of work within the scope of this order B:

Work interruption		Control and securing of the workplace		We hereby confirm with our signatures that we were informed about the status of the workplace before continuing with the work.
date	time	present	Receiving	

SPOLANA s.r.o. Neratovice Human Resources Department

APPLICATION
for the examination of professional competence in electrical engineering pursuant to Government Regulation No. 194/2022 Coll.

I am taking the exam for the first time ☐ *I am applying for* r e - e x a m i n a t i o n ☐ *I am applying for an upgrade of my qualification* ☐

1. *Focus of the examination:*

The employee registers for the examination for activities pursuant to § –

2. *Personal details:*

First and last name:

Personal number:

Date and place of birth: *District:*

Place of residence:

3. *Employer:*

SPOLANA s.r.o. *Department:* *Center number:*

Employed as: *Manager:* *Tel:*

4. *Last examination according to Decree No. 50/78 Coll. of the Czech Office for Safety and Health at Work / Government Regulation No. 194/2022 Coll.*

when: *where:* *Certificate number:*

5. *Name and address of the educational institution attended:*

Field of study: Documents:

6. *Professional experience gained on electrical equipment:*

where:

Total years *of which on HV* *on extra-high voltage in potentially explosive atmospheres*

The applicant's supervisor is responsible for the accuracy of the information provided and the applicant's medical fitness.

. . .

Signature of immediate superior (employer), stamp, and date *Signature of applicant*

(sample form)

Record of instruction and verification of employee knowledge of legal and other regulations for work on electrical equipment pursuant to Section 4 of Government Regulation No. 194/2022 Coll.

Record number: *SPOLANA s.r.o.*

Employee's first and last name :

Personal number:

Date of birth:

Job title:

The named employee has been trained in the applicable regulations pursuant to Section 4 of Government Regulation No. 194/2022 Coll. to the following extent:

1. *Legal and other regulations to ensure occupational health and safety*

   ……

2. *Legal and other regulations for working on electrical equipment and in its vicinity*

   ……

3. *Area of possible sources and causes of risks on electrical equipment and in its vicinity*

   ……..

4. *Potential hazards posed by electrical equipment*

   ……..

5. *Procedures for providing first aid in the event of electric shock*

Overall assessment of the test:……

....

examining employee position, signature) *examined employee (name, (name, signature)*

Neratovice on: Valid until: