

NEK

NUCLEAR POWER PLANT KRŠKO - NEK  
TO.VZEL- Low Voltage Stable Equipment  
Number of Tech. spec.: TS24/NNS03/R25/ST-ZI/rev1



## TECHNICAL SPECIFICATION FOR PERFORMANCE

of regular and specific maintenance activities  
on low voltage stable equipment in outage #R25

IN PO 8242156 - Activity group #A

IN PO 8242156 - Activity group #B

IN PO 8242156 - Activity group #C

IN PO 8242156 - Activity group #D

revision 1

Safety Related

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**RECORD of REVISIONS**

Rev.	Date	Subject of Change
0	25.09.2024	Original edition
1	27.11.2024 11:50:57	Added section 2.2.2.2.d) & b): NSR battery replacement DC100BATJ701 & DC100BATJ902



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## 1.0 DESCRIPTION OF SERVICES

Specification specifies the scope and requirements for performing maintenance activities on low-voltage stable equipment for #R25 planned in October 2025.

### 1.1 Regular maintenance activities

The first part of the activities includes planned maintenance activities on low-voltage stable equipment, which are performed during regular outages of the power plant and are periodically repeated. Activities are of a preventive type and are defined in the #Program of preventive maintenance of low-voltage stable equipment "ADP-1.4.455".

These activities require a professionally trained and motivated workforce, with qualified work leaders and quality controllers, who will perform the work under the supervision of the contractor work leader and the contractor quality controller or under the supervision of the NPP Krško work leader and the contractor quality controller, which is defined in point 2.2.1, Appendix 1 and in individual work orders.

The work is performed in accordance with the contractor's QA program and NEK's maintenance and QC procedures. In the case that NEK does not have its own procedures, the contractor's maintenance or QC procedures approved by the NEK may be used.

### 1.2 Specific maintenance activities

The second part of the activities defines the main groups of activities on low-voltage stable equipment, which are specific and are performed during regular outages of the NEK. Some of the activities occur cyclically.

Activities are both preventive and corrective type and consists of a large numbers of maintenance interventions on various electrical systems, their components or assemblies. These activities require a professionally qualified and motivated workforce, with qualified work leaders and quality controllers, who will perform the work under the supervision of the contractor's work leader and the contractor's quality controller or under the supervision of the NPP Krsko work leader and NPP Krsko quality controller, which is defined in point 2.2.2 and in individual work orders.

The work is performed in accordance with the contractor's QA program and NEK's maintenance and QC procedures. In the event that NEK does not have its own procedures, the contractor's maintenance or QC procedures approved by NEK may be used.

## 2.0 SCOPE OF SERVICE

The service includes pre-outage, outage and post-outage activities of the contractor.



## 2.1 Pre-outage activities

The contractor is obliged to perform all necessary pre-outage activities to ensure uninterrupted, high-quality and timely services which are fully defined in this #Technical Specification and in the contractual obligations for the performance of the outages and other services at the Nuclear Power Plant Krško. All these activities must be predetermined, presented, evaluated and verified by NEK.

For the performing of the specific activities according to this specification, it is especially important a preliminary detail review of work orders work packages and get acquainted with their content and scope, review of restrictions, conditions and deadlines, clarify any possible ambiguities in the requirements and fulfillment of set requirements and conditions.

The exact scope of activities and deadlines are specified in #GTC, from a technological point of view, the following areas are important:

- Documentation
  - revise existing and writing new maintenance and QC procedures if they are required for individual activities,
  - preparation of a pre-outage package with prescribed contents.
- Contractors
  - Employ / hire the necessary number of additional workers needed to perform the work with the required qualifications and references,
  - Ensure by evidence that workers are trained from safety and health at work, fire protection, radiological protection where required and the handling of hazardous chemicals,
  - contractually arrange relations with potential subcontractors,
  - provide work permits for foreigners,
  - provide valid medical certificates,
  - carry out the necessary general, professional and specific training for workers, work leaders and QC controllers.
- Work preparation
  - available required tools, measuring instruments and devices,
  - available work protective equipment,
  - proof of calibration of needed measuring and test equipment,
  - providing adequate facilities for workers,
  - preparations and material for the arrangement and protection of work areas.
- Execution of works
  - detailed review of work orders and work packages, acquaintance with the content and scope, review of restrictions, conditions and deadlines for implementation,





- submit a list of all workers for specific and regular activities,
- organization chart,
- verification of compliance with working conditions, radiological permits, issuance of permits for entry and movement around the facility,
- preparation and review of working devices,
- preparation, arrangement and protection of work sites.

## **2.2 Outage activities**

The service includes the implementation of activities listed under section 1. The scope of individual activities by components is given in the table in Appendix 1, which are grouped by activity groups A, B, C or D and by individual groups of components. The contents of individual maintenance activities are visible from the NEK procedures or work instructions that are part of the work orders work packages.

Specific activities have the scope of individual works defined within the TS in section 2.2.2.

The exact content of individual maintenance activities will be evident from the approved work packages of work orders for #R25, which consist of NEK procedures or NEK work instructions and related documentation.

### **2.2.1 Regular Maintenance Activities**

All activities are performed under the direction of the NEK work leaders and the contractor controllers or under the direction of the contractor work leaders and controllers and under the direction of the NEK work order coordinator and the responsible engineer of TO.VZEL/low voltage stable equipment, unless otherwise specified.

#### **2.2.1.1 Activity group #A:**

Switchgears (SWG) for DS type breakers (CBK) and Motor Control Centers (MCC), which are divided into the following groups:

- a) Revision of 400 V switchgear (SWG) for DS type circuit breakers manufactured by Westinghouse.

The contractor provides a work leader, workers and a QC controller.

- b) Revision of the 400 VAC Motor Control Centers (MCC), type W and Cutler Hammer type Freedom 2100 with all built-in components.

The contractor provides workers and a QC controllers, the activity is performed under the direction of the NPP Krško work leader.

### **2.2.2 Specific Maintenance Activities**

For individual activities, responsible engineer can expand the scope of work if necessary.

#### **2.2.2.1 Activity group #A:**

- a) Training of contractor workers on the MCC model for quality performance of maintenance work:



Resources for the performance of works:

Activity	Workers:No./h	Qc:No./h
Training of contractor workers on the MCC model	7W X 8 h	1Qc x 8h
TOTAL h:	56 h	8 h

Training is expected to take place in the first week of the outage #R25 or 7 days before the outage. The date will be determined 14 days before the outage.

#### 2.2.2.2 Activity group #B:

- a) Performance of regular outage activities, corrective interventions, assistance during battery testing and other activities on stable low voltage stable equipment such as un-supervised replacement of control switches, selector switches, AR/ARD control relays, cable replacements and other activities under the direction of the NEK work leader or coordinator (In this case the work is performed under the supervision of the contractor's work leader) and QC controller.

Resources for the performance of works:

Activity	Workers:No./h	Qc:No./h
Independent performance of work under the direction of the NEK work leader or coordinator & QC controller.	4W X 230 h	NA
TOTAL h:	920 h	0 h

**NOTE:** The maximum number of TOTAL worked hours is  $\Sigma$  920 hours. The presence of employees is kept on the basis of a confirmed daily work log.

Workers must have the following qualifications and experience: use of series B-208 drawings for component replacements, NEK experience from past replacements of type AR/ARD control relays and type W-2 control and type OT2 selector switches. Depending on the needs of the activities, workers can be exchanged by workers who are appropriately qualified and have experience in replacing conduits, flexible parts of conduits and other associated parts.

- b) Replacement of battery cells on battery DC100BATJ101 (A), DC100BATJ902 (A←X-spare), DC100BATJ301 (B).

The contractor provides workers. The activity is carried out under the direction of the NEK work order and occasionally by responsible engineer.

Resources for the performance of works:

Activity	Workers:No./h	Qc:No./h
Review of the work package before implementation	10W X 4h	/
Performance of works. Work is carried out 12 hours on A train, 8 hours on A←X (SPARE) train and 8 hours on B train.	10W X 12h (A) 8W X 8h (B) 10W X 8h (A←X)	/
Entering history in the work order	/	/
TOTAL h:	304 h	0 h



- c) Removal of metal braids from cable wires and installation of new braids made of non-conductive material on CB102BRDK503-A & CB102BRDK503-B control cabinet components.

The contractor provides a work leader = worker and a QC controller. The activity is carried out under the direction of the NEK work order coordinator and occasionally by responsible engineer.

Resources for the performance of works:

Activity	Workers:No./h	Qc:No./h
Review of the work package before implementation	1W X 4h	1Qc x 4h
Performance of works.	1W X 13h (A)	1Qc x 13h (A)
Work is carried out 12 hours on A train and 12 hours in B train.	1W X 13h (B)	1Qc x 13h (B)
Entering history to the e-work order	1W X 2h	1Qc x 2h
TOTAL h:	32 h	32 h

- d) NSR battery replacement DC100BATJ701 (104 cells). The contractor provides a work leader, workers and a QC controller. Activity is carried out under the supervision of the NPP Krško coordinator and the responsible engineer.

Instructions for the implementation of activities are prepared by the NPP Krško.

Resources for the performance of works:

Activity	Workers:No./h	Qc:No./h
Work package overview	1W X 8h	1Qc x 8h
Preparation of the work site and work tools and equipment	2W X 8h	NA
Removing of the old installed battery and transportation to a temporary landfill	14W X 13h	1Qc x 13h
Cleaning and lubrication of the connecting material	10W X 12h	1Qc x 13h
Installation of a new battery, their connections and lubrication	14W X 13h	
Cleaning and other required finishing works	8W X 6h	1Qc x 6h
Transfer of batteries from temporary landfill to hazardous waste containers	3W X 12h	NA
Arranging of the work package and entering the history to the e-work order	1W X 6h	1Qc x 6h
Total h:	598 h	46 h

**NOTE:** To lift battery cells with a dedicated hoist, the hoist operator and battery lifter must be appropriately qualified to tie loads and work with hand-held chain hoists. The specifics will be presented before the works are carried out.

#### 2.2.2.3 Activity group #C:

Heating devices, their control and supply devices and distribution cabinets with compact circuit breakers (MCCB), which are divided into the following groups:

- Revision of power supply panels for electric pressurizer heaters.





- Visual inspection of pressurizer electric heaters and associated power supply cables and splices.
- a) Performance of regular outage works, corrective interventions and other activities on stable low voltage equipment such as un-supervised replacement of control switches, selector switches, AR/ARD control relays, cable replacements, circuit breaker revisions, various tests and other activities.

All activities will be performed under the direction of NPP Krsko work leader or coordinator (in this case the work is performed under the supervision of the contractor's work leader) and QC controller.

Resources for the performance of works:

Activity	Workers:No./h	QC:No./h
Independent performance of work under the direction of the NEK work leader or coordinator & QC controller.	1W X 230 h	NA
TOTAL h:	230 h	0 h

**NOTE:** The maximum number of TOTAL worked hours is  $\Sigma$  230 ur. The presence of employees is kept on the basis of a confirmed daily work log.

Workers must have the following qualifications and experience: works on electricity heaters and its subcomponents on NEK pressurizer, works on distribution panels with MCCB's, use of series B-208 drawings for component replacements, NEK experience from past replacements of type AR/ARD control relays and type W-2 control and type OT2 selector switches. Depending on the needs of the activities, workers can be exchanged by workers who are appropriately qualified and have experience in replacing conduits, flexible parts of conduits and other associated parts.

#### 2.2.2.4 Activity group #D:

- a) Performance of regular outage works, corrective interventions and other activities on stable low voltage stable equipment such as un-supervised replacement of control switches, selector switches, AR/ARD control relays, cable replacements and other activities under the direction of the NEK work leader or coordinator (In this case the work is performed under the supervision of the contractor's work leader) and QC controller.

Resources for the performance of works:

Activity	Workers:No./h	QC:No./h
Independent performance of work under the direction of NPP Krsko work leader or coordinator & QC controller.	2 X 230 h	NA
TOTAL h:	460 h	0 h



**NOTE:** The maximum number of TOTAL worked hours is  $\Sigma$  230 ur. The presence of employees is kept on the basis of a confirmed daily work log.

Workers must have the following qualifications and experience: use of series B-208 drawings for component replacements, NPP Krsko experience from past replacements of type AR/ARD control relays and type W-2 control and type OT2 selector switches. Depending on the needs of the activities, workers can be exchanged by workers who are appropriately qualified and have experience in replacing conduits, flexible parts of conduits and other associated parts.

### **2.2.3 Additional activities not provided within the regular and specific activities**

By prior agreement and consent of both contracting parties and in accordance with the NEK procurement process, additional activities that are not listed within Appendix 1 of this Technical Specification and specific activities may be requested based on process needs.

### **2.3 Post-outage activities**

For specified regular and specific maintenance activities from sections 2.2.1 and 2.2.2 according to this specification is NOT required preparation of a post-outage report, except for the requirement 10.4h) as the activities are detailed within the work packages and thus no additional post-outage report is required. As found state, as left state, work package attachmets, QC report, used resources, used measuring equipment and used material shall be written to the work packages and after the performed activities shall be entered directly into the electronic work order by work leader and QC controller. Prior to scanning of work package, it must be reviewed by the NEK coordinator and responsible engineer. All found deviations and possible improvements shall be resolved immediately with the NEK coordinator and responsible engineer. Electronic work order history shall be completed immediately after the completion with essential data proving that the equipment is in good condition and is redy for return to service.

Any analyzes of individual activities made, shall be documented in the work order work package. All data shall be entered to the electronic work order no later then one week after completion of the work order.

## **3.0 SAFETY CLASIFICATION OF SERVICES**

The service includes maintenance activities on various equipment and systems of the power plant, on safety (SR), non safety related (NSR), as well as on equipment important for operation (AQ). Consequently, the service is classified as Safety Related (SR).

All activities must be carried out in accordance with the QA requirements defined in point 13.0.



#### 4.0 NPP KRSKO TYPE OF SERVICES

The service within the scope of point 2.2.1 of this specification will be performed at a fixed agreed price for a known scope of activities according to the contractor's QA plan and program and according to NEK procedures, which are specified in Appendix 1. Activities are performed under the direction of contractor work leaders or NEK work leaders and contractor QC controllers and under the NEK coordinator. Appendix 1 shows whether the work leader and QC controller is from contractor or from the NEK.

The service within the scope of point 2.2.2 of this specification will be performed according to the hourly rate and on base of actually performed work, confirmed in the daily work log. The work is performed according to NEK procedures and under the direction of the NEK work leaders and NEK QC controllers or by NEK coordinators (In this case the work is performed under the supervision of the contractor's work leader) and NEK QC controllers or contractors QC controllers what is defined within point 2.2.2.

The offer must be submitted separately for regular and specific maintenance activities and by activity groups.

The daily work log is kept by individual work orders from the scope of services under points 2.2.1 and 2.2.2.

#### 5.0 CODES, STANDARDS AND PROCEDURES FOR SERVICES

##### 5.1 Administrative procedures for performing activities related to the work process in the NPP Krsko:

- a) ADP-1.0.020; Uporaba korektivnega programa,
- b) ADP-1.1.122; Izdaja priprava in planiranje delovnega naloga (Priloga 6.3: Navodilo za delo),
- c) ADP-1.1.125; Izvedba delovnega naloga,
- d) ADP-1.1.126; Testiranje po vzdrževalnih posegih (TPV),
- e) ADP-1.1.127; Zaključitev delovnega naloga,
- f) ADP-1.3.004; Osamitev opreme in naprav,
- g) ADP-1.2.116; Nadzor dokumentov v NEK.

##### 5.2 Administrative procedures related to safety and health at work in the NPP Krsko:

- a) ADP-1.1.033; Varnost in zdravje pri delu v Nuklearni elektrarni Krško,
- b) ADP-1.14.221; Varstvena pravila in ukrepi pri delu pred nevarnostjo električnega toka,
- c) ADP-1.1.222; Delo pod napetostjo na nizki napetosti,
- d) ADP-1.1.101; Preprečitev vnosa tujkov,
- e) ADP-1.6.701; Kontrolirani vstop nevarnih kemikalij v NEK,





- f) ADP-1.1.051; Vstop, izstop in gibanje v tehnološkem delu NEK,
- g) FPP-3.7.004; Kontrola vnosa gorljivih snovi,
- h) ADP-1.1.128; Kontrola izvajanja vzdrževalnih aktivnosti z namenom preprečitve vnosa tujkov v sisteme NEK,
- i) ADP-1.7.005; Iznos opreme, rezervnih delov, orodja in drugih materialov iz radiološko kontroliranega območja NEK,
- j) ADP-1.7.008; Dovolilnica za delo v področju sevanja,
- k) ADP-1.1.080; Naročanje rezervnih delov, materiala in storitev v tehnični operativi,
- l) PRZ-7.101; Vstopanje in izstopanje iz kontroliranega območja NEK,
- m) ADP-1.1.158; Vzdrževanje reda in čistoče, kontrola čistoče in stanja opreme na področju tehnološkega procesa,
- n) ADP-1.7.007; Vnos opreme, rezervnih delov, orodja in drugih materialov v radiološko kontroliranem področju.

5.3 General Terms and Conditions to perform services at the NPP Krsko.

5.4 10CFR50, Appendix B: Title 10, Part 50: Quality Assurance Criteria for Nuclear Power Plants.

5.5 Quality Specification QS 610: Generic Quality Assurance Program Specification.

5.6 Procedures related to the implementation of maintenance activities:

- a) Procedures for individual maintenance activities are listed in the table in Appendix 1 of this TS or in the work order work package.
- b) ADP-1.4.455; Program preventivnega vzdrževanja nizkonapetostnih stabilnih naprav.

5.7 All work orders packages according to which maintenance activities will be performed will be equipped with appropriate instructions for activity implementation, procedures, checklists, plans and other necessary forms.

5.8 Additional necessary documentation will be delivered to the contractor by the NPP Krško coordinator or can be obtained by the contractor with initiation of a request for the issuance of documents (ref. 5.1g)) in the NPP Krsko

## 6.0 IDENTIFICATION OF EQUIPMENT AND COMPONENTS

6.1 Regular maintenance activities

Activities are listed in the table in Appendix 1.

6.2 Specific maintenance activities

Activities are shown in section 2.2.2, individual details will be seen in work order work packages.





## 7.0 TECHNICAL REQUIREMENTS

- 7.1 The contractor must comply with the NEK procedures, standards and technical regulations relating to the equipment referred to in section 6. It must also ensure the following:
- a) That all preconditions for the execution of works, such as tools, controlled spare parts, personal and other protective equipment, etc., are provided in a timely manner,
  - b) That the instructions of work leader are followed in the execution of the works, that the works are carried out in accordance with the work order work package and in the planned time, of the appropriate expected quality and without additional repairs,
  - c) That only appropriate controlled spare parts are installed during installation,
  - d) To implement all the needed measures for Foreign Material Exclusion (FME) into open systems,
  - e) Strictly follow the rules of safety at work and fire protection,
  - f) Proper temporary storage of tools, storage and disposal of hazardous materials such as various cleaners, lubricants, etc.,
  - g) Maintaining of order and cleanliness in the workplace,
  - h) That Post Maintenance Test (PMT) was successfully performed according to the maintenance procedure.
- 7.2 All activities on the equipment requires technological preparation and must be carried out in accordance with the QA program and the approved procedures of the contractor, which have been approved by the NEK or in accordance with the applicable NEK procedures.
- 7.3 For all activities where required by the work order or working procedures, the contractor must ensure adequate and sufficient quality control of the work performed, which must be performed by verified quality controllers approved by the NEK. In Appendix 1 and in point 2.2.2 are also specified needs for controllers by each activity.
- 7.4 All identified deficiencies that may affect the operational capabilities of the equipment must be carried out in the checklist - a list of deviations and repairs performed (part of the work order work package). Information about deficiency must also be immediately reported to the NEK coordinator and if necessary, also to the responsible engineer.
- 7.5 Any corrective activity that exceeds the scope of the given instructions (work order, checklist, work procedure, manufacturer's instructions) must be approved by the NEK responsible engineer. A new CM or DM work order shall be issued for all major component repairs or replacements. The procedure is the same for corrective activities based on approved NEK NCRs.
- 7.6 During the implementation of activities, the contractor must immediately fill in all performed activities in the checklists of work order work



package, as well as other related documentation that is created during the implementation of works.

The documentation of the work package must show that the equipment is capable of further operation after the activity has been performed. Upon completion of the activity, contractor is obliged to complete the activity at Nek-omat (computer for processing of electronic work orders) with the prior permission of the NEK coordinator. The method and exact scope of entering the history must be coordinated with the responsible engineer.

## 8.0 LABOR QUALIFICATION REQUIREMENTS

The contractor must have and present references of good work with at least 5 years of experience on low voltage stable equipment in nuclear power plants or other thermal power plants with electrical output power > 300 MW on the same groups of equipment as listed in point 6.0 with the equivalence or better maintenance methods.

- 8.1 All workers must have an appropriate electrical education and be theoretically and practically qualified to perform the required work. At least 50% of workers who will perform work on equipment covered by this specification must have demonstrable experience from previous works on the same type of equipment at the NEK or from other nuclear or thermal power plants.

Workers required to perform specific maintenance activities must have 100% proven experience from previous works on the same type of equipment at the NEK or outside NEK in other nuclear or thermal power plants.

Also, their daily work should include activities from the electrical profession, such as maintenance, installation of new and testing of identical electrical or similar equipment.

- 8.2 All work leaders and QC controllers must have work experience in the maintenance of equipment referred to in section 6.0 acquired in the last three fuel cycles on works on this equipment at the NEK, on the same or equivalent equipment outside the NEK, or on specialist training at the manufacturer sites of these equipments, which must be proven for each individual with the attached references in the offer.

- 8.3 All work leaders must have completed a course for subcontractors.

- 8.4 QA engineer must be appropriately qualified and familiar with the specific requirements of the NEK listed in points 7 and 13.

- 8.5 All workers must be aware of the hazards at work.

- 8.6 For activities in the controlled area, workers must have completed and valid course of radiological protection of category RZ-III or higher level (training is carried out by SU NEK for category RZ-III).

- 8.7 All workers must meet the safety inspection requirements arising from the applicable legislation and the requirements of the NPP Krško Security Service.



- 8.8 To perform specific maintenance activities, employees must be able to actively speak Slovenian. In order to perform regular maintenance activities, employees must be able to actively speak Slovene or Croatian and understand Slovenian language.

## **9.0 REQUIRMENTS REGARDING THE DETAIL SCHEDULE OF WORK PERFORMANCE**

- 9.1 Scheduled outage will begin on September 28th, 2025. The final dates of the activities will be evident from the final (frozen) version of the outage plan #R25. The diagram of workers needs by days will be made from 7-30 days before the start of the outage.
- 9.2 Working hours: Activities that do not have a 24-hour calendar will usually be carried out 7 days/week/8-12 hours/day, and other activities in accordance with the requirements arising from the general outage plan. Every 6 consecutive working days, the worker must have 1 day off. The dynamics of the activities are adjusted to the current changes in the plan.

## **10.0 SUPPLIER RESPONSIBILITIES**

The contractor must declare that he is fully aware of, accepts and fulfills the contractual obligations for the performing of services at the Nuclear Power Plant Krško. In addition, it must fulfill the following requirements bellow:

- 10.1 **When submitting the bid, the contractor is obliged to submit the following, but not limited to:**
- a) Organizational chart from which by names will be seen at least: the project manager, QA engineers, QC controllers and work leaders and their mutual relations. Workers for specific activities under points 2.2.2.2b), d)0 & 2.2.2.4a) must also be identified by name.
  - b) Number and time availability of contractors,
  - c) List of the necessary general and professional training of contractors,
  - d) Reference list of existing works for work leaders, QA and QC workers, and workers for specific activities under point 2.2.2.2b), d)0 & 2.2.2.4a).
  - e) A statement of the relevant qualifications of the contractors workforce in accordance with the requirements of point 8.0,
  - f) A statement that contractor fully knows, accepts, and meets these Technical Specifications and General Terms and Conditions for the performance of outage works #R25 at the NEK, the latest revision, which is an integral part of the contract,
  - g) Submit a list of contractor procedures for performing maintenance and QC activities, if no NEK procedures are available.



**10.2 Prior starting works, the contractor is obliged to:**

- a) Ensure that the work leader and QC controller will be reviewed each work package together with the NEK coordinator or responsible engineer, conduct interview about the method of implementation of maintenance activity, potential problems during implementation, prepare a program to protect the site and equipment, etc.,
- b) Ensure that all contractor workers have all the documentation required by the currently valid revision of the General Terms and Conditions for the performance of outage works at the NEK, which are an integral part of purchase order,
- c) Ensure an adequate number of professionally trained workers to perform the work with the general and professional trainings and requirements from the point of 8.0. of this specification,
- d) Ensure that all workers are equipped with appropriate personal protective equipment (helmets, work clothes, work shoes, gloves, etc.) and that they are used for their intended purpose,
- e) Ensure that, if necessary, contractor workers will personally borrow special tools and instruments that it does not have from the NPP Krsko if available,
- f) Workers performing activities on batteries must have all personal protective equipment (PPE) for work with acid, live work and electrostatic dissipative properties.
- g) Provide all standard inch tools and measuring equipment necessary for the successful performing of works. All measuring instruments and devices used must be validly calibrated,
- h) Provide adequate (verified) grounding cables, voltage indicators, ladders, reflectors, cable extensions, vacuum cleaners and other necessary work tools,
- i) Purchase consumables (cotton cloths, alcohol, various brushes, contact cleaners, etc.),
- j) Ensure that workers perform work exclusively in accordance with the procedures, drawings, instructions and other referenced documentation attached to the work order for the specific work,
- k) For works that are not covered by NEK procedures, the contractor must develop its own procedures for works and QC control of works, which must be approved by the NEK responsible engineer.
- l) To harmonize working hours with working hours, which derive from the current schedule of the NEK and are continuously adjusted to the conditions of the power plant,
- m) Ensure that workers are adequately protected and that they use tools, instruments and other tools in such a way as to avoid unnecessary contamination,
- n) Ensure that workers comply with the NEK Krsko house rules and that they are disciplined at work, respect the regulations on safety at work, otherwise NEK will demand the removal of workers or replacement with others,





- o) Deliver a valid medical certificate for the performance of work on nuclear facilities without restrictions. Must be medically fit to work at altitude, depth and conditions where noise and temperatures above 30°C are present, work in radiologically controlled areas, occasional use of a face mask. Environmental conditions are not the same for all activities,
- p) The contractor must be qualified to perform work in radiologically controlled areas,
- q) In order to lift battery cells with a dedicated lift, the lift operator and battery lifter must be suitably qualified to tie loads and work with hand-held chain hoists.

**10.3 During the performing of works, the contractor is obliged to:**

- a) Performing of work in accordance with maintenance and control procedures,
- b) Ensure for the protection of equipment, disassembled parts of equipment and prepared spare parts at the work site where the work is performed,
- c) Take care of internal transport of equipment and its parts,
- d) Inform on an ongoing basis the NPP Krsko coordinator and responsible Engineer of any deficiencies and deviations they observe,
- e) To comply with any subsequent oral or written instructions regarding the performing of works that will be received from the NEK coordinator or the responsible engineer,
- f) Fill in the work package checklists on an ongoing basis,
- g) Write any detected deficiency and corrective action in the checklist - A list of deviations and repairs performed (part of the work order work package). Information about deficiency must also be immediately reported to the NEK coordinator and if necessary also to the responsible engineer,
- h) Provide configuration control over the installed spare parts and accompanying documents (serial numbers, revisions, etc.).

**10.4 Upon completion of the works, the contractor is obliged to:**

- a) After the completion of the maintenance activity, work leader and QC controller transfer all information, including the information that the equipment is ready and capable of further operation and indicate any restrictions and reasons for them to the NEK activity coordinator and responsible engineer. All required checklists must be completed before putting the equipment back into operation. Based on this information, NEK coordinator hands over the equipment back into operation and if necessary, also consults with the responsible engineer.
- b) Work order history must be completed no later than one week after the completion of the activities of the E-work order. However, with essential data proving that the equipment is in good condition, the history must be completed immediately after the completion of the E-



work order, as this is a condition for putting the equipment back to operation.

- c) Submit the completed work package to the NEK coordinator for review and signatures. After that, the contractor takes care of the final entry of all data to the E-history of the work order after approval of compliance by the NEK coordinator and, if necessary, from the responsible engineer. The E-history for certain activities is entered by the NEK coordinator.
- d) Configuration control must be provided and evident from the E-history (electronically and from the work package).
- e) After the work is completed, the work order must clearly show the procedures by which the work was performed and controlled, and a statement that the equipment is ready and capable of further operation and indicate any restrictions and reasons for them.
- f) Work order history must also contain the following information:
  - perform of unplanned works,
  - a list of deviations and repairs performed with analysis of the causes,
  - analysis of the condition of the equipment and recommendations until the next maintenance activity,
  - planned and spent hours and reasons for deviations from the plan.
- g) Ensure that workers will clean their work area after the work is completed, remove all protective fences, curtains, additional groundings, store tools and work accessories, arrange the work area in accordance with the operating conditions of the power plant.
- h) Prepare the Final Report within 30 days after the completion of the activities. Two copies of the report in electronic searchable pdf format (resolution  $\geq 300$  DPI) on a USB stick must be submitted to NEK/TO.VZEL. The report must show:
  - execution of planned and unplanned activities,
  - planned and spent hours after individual regular and specific outage activities, activity groups must be allocated and reasons for the planned deviations given.

## 11.0 NEK REQUIREMENTS

NEK assumes obligations and will meet the General Terms and Conditions for the performance of outage works at the NEK, which are an integral part of the contract. In addition to the General Terms and Conditions from the previous sentence, NEK also undertakes:

- 11.1 Provide a work order working package with all the necessary procedures, drawings, instructions and other documents necessary for the smooth, safe and quality performance of work.
- 11.2 Ensure the preparation of the quality control operation of the work order with all requirements. In the case that the contractor performs quality



control and that the contractor prepares the control activity by prior agreement with the NEK, NEK shall review the prepared activity and inform the contractor if necessary to ensure that it is properly prepared in the work order work package.

- 11.3 Ensure that, based on the data of the replaced components and the accompanying documentation, it will arrange configuration in the E-work order.
- 11.4 Provide or make available to the Contractor the applicable procedures and documents referred to in point 5.0.
- 11.5 Ensure the isolation of the system / equipment on which the concrete work is performed.
- 11.6 Ensure entry into the technological part of the power plant and take care of radiological control.
- 11.7 Coordination of the performance of works between TO.VZEL and TO.PLAN (beginning of works, end of works, current changes of the plan ...).
- 11.8 Coordination of the implementation of works with other contractors (support of other disciplines).
- 11.9 Provide all necessary spare parts from the NEK warehouse.
- 11.10 Provide the Contractor with free use of its workshops and electricity, water and compressed air under technical conditions and with the special permission of TO.PR.
- 11.11 Provide conditions for post-maintenance testing (PMT).

**NOTE:** All other general obligations of the contractor and the NEK (accommodation of the contractor workers, medical examinations, food, payment terms, billing dynamics, insurance, liability for damage, etc.) are defined in the "General Terms and Conditions".

## 12.0 SPECIAL REQUIREMENTS

- 12.1 During the warranty period of 12 months, the Contractor shall ensure and undertake that in the event of unplanned - emergency situations on the equipment covered by this specification, it will be available to NEK within 12 hours of receiving the call after intervention with the appropriate team of workers which will meet the conditions set out in point 8.0 .
- 12.2 The Contractor undertakes not to use the data, information and documents received in the performance of activities under this specification for other purposes and not to pass them on in part or in full to third parties or to make them public.

## 13.0 QA REQUIREMENTS

For activities, the Supplier shall establish a quality assurance (QA) Program that complies with the requirements of Title 10, Code of Federal



Regulations, Part 50, Appendix B (10CFR50, Appendix B), Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants and the requirements of the enclosed specification QS-610, Rev. 2, Generic Quality Assurance Program Requirements.

The Supplier's bid shall be accompanied by the QA Manual of the latest revision, if not previously submitted to NEK. The relevance and effectiveness of the Supplier's QA Program shall be reviewed and approved by NEK prior to the contract award. The same shall apply to any subsequent changes proposed by the Supplier during the implementation of the purchase order.

Any noncompliance and defects shall be reported in compliance with the requirements of Title 10, Code of Federal Regulations, Part 21 (10CFR21), Reporting of Defects and Noncompliance.

The works are performed in accordance with the contractor quality assurance system and a pre-agreed QC plan, technological and control procedures as defined in point 5.0. and Appendix 1 to this specification, and applicable legislation and standards related to the scope of work. The works are performed under the direction of the NEK work order coordinator, contractor work order leader or NPP Krsko work leader and QA/QC staff of the contractor and the NEK responsible engineer, unless otherwise specified.

The contractor assumes responsibility for meeting the quality requirements, meeting the commercial and technical requirements and meeting the time schedule for all its potential subcontractors.

The contractor shall ensure that his subcontractors perform the work in accordance with the requirements of this specification.

#### 14.0 ATTACHMNETS

##### 14.1 Appenndix 1: Regular maintenance activities to be performed in #R25.





### Appendix 1: Regular maintenance activities to be performed in #RE25.

Sys	Asset	Asset description	T	Activity description	Tag	No. Work./ No. Qc cont.	Procedures/ Work Inst.	Act. group	Rad. Area	Qc Ext.	Work leader
EE	EE103MCCD121	MCC 400 VAC; 10V, AB100	A	Preventive. Maint. + Protection Test	Y	*2D x 2ur *1Qc x 2ur 6D x 12ur 1Qc x 12ur	PME-4.103	#A	DA	Y Ext.	NEK
EE	EE103MCCD113	MCC 400 VAC; 3V, ESW100	A	Preventive Maint.	Y	3D x 8ur 1Qc x 8ur	PME-4.103	#A	No	Y Ext.	NEK
EE	EE103MCC112	MCC 400 VAC; 8V, TB107	X	Preventive Maint.	Y	6D x 10ur 1Qc x 10ur	PME-4.103	#A	No	Y Ext.	NEK
EE	EE103MCC111	MCC 400 VAC; 11V, TB107	X	Preventive. Maint. + Protection Test	Y	*2D x 2ur *1Qc x 2ur 6D x 12ur 1Qc x 12ur	PME-4.103	#A	No	Y Ext.	NEK
EE	EE103MCCD211	MCC 400 VAC; 11V, IB100	B	Preventive. Maint. + Protection Test	Y	*2D x 2ur *1Qc x 2ur 6D x 12ur 1Qc x 12ur	PME-4.103	#A	No	Y Ext.	NEK
EE	EE103MCCD311	MCC 400 VAC; 6V, BB1_100	Y	Preventive. Maint. + Protection Test	Y	*1D x 2ur *1Qc x 2ur 5D x 10ur 1Qc x 10ur	PME-4.103	#A	No	Y Ext.	NEK
EE	EE103MCCD321	MCC 400 VAC; 8V, BB1_100	Y	Preventive. Maint. + Protection Test	Y	*2D x 2ur *1Qc x 2ur 6D x 10ur 1Qc x 10ur	PME-4.103	#A	No	Y Ext.	NEK
		<p>NOTE: With an asterisk (*) Are planned additional resources for removal the MCC doors prior to protection testing. Preventive maintenance work begins with the delay after start of protection testing!</p> <p>Abbreviations: Cont - Contractor; Rad. Area – Radiological Area; T - Train</p>									