KRŠKO NUCLEAR POWER PLANT (NEK)
TO.VZST
Mechanical Maintenance Department

TECHNICAL SPECIFICATION

FOR SUPERVISION OF RCP 01 AND RCP 02 SEALS REPLACEMENT DURING 2025 OUTAGE

(IN 8242004)

Revision: 1

Classification: "Nuclear Safety Related"

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1. ACTIVITY

The Specification gives a scope of maintenance services on RCPCPC01 (RCP1) and RCPCPC02 (RCP2) Reactor Coolant Pumps during NPP Krško 2025 outage (October 2025). Service has to be made by one qualified service engineer. He shall supervise and help the Reactor Coolant Pump's coupling removal, cartridge seals and No. 1 seal removal, as found inspection, installation of inspected No. 1 seal and installation of requalified cartridge, coupling and spool piece. The services will be performed by NEK maintenance team and equipment and tools will be provided by NEK.
All administrative and technical requirements for both contracting parties are indicated, too.

2. SCOPE

2.1 Pre-outage Activties

One month before the start of outage activities on site the Contractor shall submit all necessary procedures and documentation related to the work performance. It shall be reviewed and approved by NEK. The documentation package shall be made in accordance with Westinghouse Instruction Book - Reactor Coolant Pump - Model W-11014-A1 (M100D), its Product Update Bulletin Data Reference Guide and the documentation used during the refurbishment of NEK RCP pumps and seals. The documentation package shall comprise also the related time schedule.

The Contractor shall submit to NEK all necessary certificates for the service engineer which enables him to work in radiation-controlled area. Prior to the start of service he shall also get familiar with specific details concerning the performance of services at NEK.

2.2 Outage Services

The scope of outage services on the Reactor Coolant Pumps RCP1 and RCP2 during NPP Krško 2025 outage shall be supervised by the qualified service engineer and includes the following:

- Supervision of Reactor Coolant Pump's spool piece, coupling, cartridge, and No. 1 seals removal,
- Inspection of removed parts and parts before installation,
- Supervision of Inspected No. 1 seal, requalified cartridge, coupling and spool piece installation.

Services shall be performed according to NPP Krško 2025 Outage Time Schedule that means that the work shall be carried out every day and overtime if needed. A rest day is scheduled before the seals replacement activity on the second RCP pump. The service engineer shall perform services as a member of NEK's team led by NEK's Maintenance Work Leader. The team shall perform all necessary services in accordance with relevant procedures approved by NEK and the Contractor. Contractor's scope of services comprises the supervision performed by serviceman who shall control all services performed.

Service Engineer has to specify in detail the conditions found and if needed, write down a Non-Conformance Report, which has to be written as soon as possible but not later than 24 hours after the non-conformance was discovered.
During the performance of services some conditions shall be satisfied such as constant tidiness of work environment, safe workplace and the use of protective equipment following the instructions of Safety at work.

2.3 Preliminary Report

Preliminary Report shall be submitted by the Contractor during the exit meeting at the latest. It shall include, but not necessarily be limited to the following:

a. List of applied documents
b. Description of performed work with as found and as left status;
c. Completed Work Sequence and Quality Control Plan with references to applicable procedures, acceptance criteria, Inspection & test Records/Reports and part or subassembly identification (part number, serial number);
d. Inspection and test Records /Reports;
e. List of Non-conformance (NCR) reports as well as methods of their resolving and NCR issued with corrective action verification;
f. List of parts status with identification, repaired, modified, replaced, method of processing, short description of works completed;
g. List of Personnel involved in service with qualification Records;
h. Recommendations.

2.4 Final Report

It shall be made in accordance with item 2.3 above for the performance of services during NPP Krško Outage.
Final Report shall be submitted to NEK in four copies thirty (30) days upon submittal of Preliminary Report. Prior to delivery of the final report to NEK it shall be reviewed and approved by Contractor's responsible Engineering and QA personnel.

3. SAFETY CLASSICATION

3.1. SR - "Safety Related"

Reactor Coolant Pumps are classified as "Nuclear Safety Related" in accordance with ASME and ANSI standards. The services are classified as Nuclear Safety Related. For the work on such components the Contractor shall be familiar with original technical regulations for design. The services shall be performed according to Contractor QA Program and the procedures approved by NEK.

4. TYPE OF SERVICE

The implemented work of the Contractor will be paid based on time and material basis. Inspection by Service engineer shall be performed in accordance with the Contractor QA/QC program and with the Contractor technological documentation, procedures and specifications which shall be approved by NEK one month prior to the work start.

5. CODES, STANDARDS AND PROCEDURES

The applicable codes and documents for the service are:

- ASME regulations, especially Sections III, V and XI Edition 1971 and Addenda Eddition 1972.
- 10CFR50 App. B: Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
- Instruction Book 203; Westinghouse Instruction Book; Reactor Coolant Pump; Model W-111014-A1 (M100D)
- Product Update Technical Bulletin Data Letter Reference Guide
- 8MN 20411 rev,A List of applicable documents for Removal-Inspection-Reassembly of the Shaft Seals,
- SNT-TC-1A Recommended Practice for Nondestructive Testing Personnel Qualification and Certification,
- ADP-1.101 Preprečitev vnosa tujkov (Foreign material exclusion – FME)

The Contractor shall perform services in accordance with his own procedures for work and quality control documents and in accordance with QA Program of his own. He shall also possess other procedures if required by technological process offered in Bidder's proposal.

6. IDENTIFICATION OF EQUIPMENT AND COMPONENTS

Reactor Coolant Pump:

System:	RC
Funct. Desc.:	REACTOR COOLANT PUMP
Equipment No:	RCPCPC01 (RCP1), RCPCPC02 (RCP2)
Building:	RB
Bldg. Elev.:	107.62
Equip. Elev.:	107.62
Room:	03A, 03B
ASME:	1
SR:	Y
Manufacturer:	Westinghouse Electric Corporation, Framatome – Jeumont SA
Manuf.Part No. :	115E570 G01
Manuf. Serial No.:	2-115570 G01, #4-1GA5763-K
Drawing:	115E570 rev.10, 1188E09 rev.14, 1GA5763 rev.K
Manual:	Instruction Book 203, Westinghouse Instruction Book; Reactor Coolant Pump: Model W-1-11014-A1 (M1000D)

7. TECHNICAL REQUIREMENTS

The Contractor's obligation is to provide all necessary knowledge and expertise in order that the seals replacement activities could be successfully completed. The contractor shall be familiar with NEK's approach to such activities. The site representative shall have full and timely support from the home office in case of necessity.

As part of the bidding documentation the bidder should present for each outage:

• The statement that he is the original equipment manufacturer or possess the equipment manufacturing licence
• A list of applicable documents and drawings
• Present a list of personnel qualifications: educations, duties, skills, trainings, etc.
• Certificates that NDE controllers are qualified in accordance with SNT-TC-1A for visual control, PT, UT, MT.
• Reference list for works on RCP seals (year of work, plant name, pump model, scope of work)
• The field service rates for Service Engineer

The services shall be performed according to related procedures and instructions for work. Special attention shall be paid to the following:

- Assurance of all preconditions for the performance of services,
- Tolerances, setups and measured values shall not exceed the prescribed values,
- Only proper and faultless spare parts provided by NEK shall be installed,
- Make sure before installation that all flange junctions and tightening surfaces are faultless and clean,
- Successful testing after maintenance intervention,
- Assurance of the tightness and successful operation after intervention at full power.

8. QUALIFICATION REQUIREMENTS

The service engineer shall have at least three references in last 5 years that he has successfully performed the services as defined in item 2 on the type of pump specified in item 6. He shall be qualified for work on NEK's type of reactor coolant pumps. Appropriate knowledge and qualification shall be proved with certificates of attending relevant trainings and with references of works performed on the said equipment. The qualification record of the service engineer shall be submitted to NEK with delivery of the proposal.
Prior to the start of services in the plant the service engineer shall get familiar with the house rules concerning NEK's basic regulations on the movement on site, treatment of equipment, the requirements of safety at work, as well as with the requirements of radiological and fire protection.
The service engineer shall perform services in accordance with relevant procedures, prescriptions and regulations as stated in item 5. He shall be familiar with NEK's method of work and shall follow NEK's procedures.

9. DETAILED SCHEDULE

The beginning of 2025 year outage is scheduled for September 28th. Start of RCP1 seals replacement works is scheduled for October 6th (until 9th) and the start of RCP2 seals replacement works is scheduled for October 10th (until 13th). The service engineer shall arrive at NEK site at least one day earlier to pass NEK General Employee Training and other Site formalities. Duration of RCP replacement works on the field is approximately 4 days per pump. Because schedule is not finished yet a detailed schedule of work on the RCP pumps will be given at least 15 days prior to outage start. As to NPP Krško 2025 Outage Time Schedule, the Contractor shall follow NEK's plan which will be harmonized every day with schedules for the performance of other NEK's outage activities. Services on the primary system pumps shall be carried out on critical path. Therefore, special attention shall be paid to exact order of the performance of such services. Coordination of the performance of services shall be made between Contractor's Service Engineer and NEK's coordinator competent for the said scope of services.
For employee to be mobilized during NPP Krško 2025 Outage the Contractor shall submit the documentation to NEK ten days before the start of the outage at the latest or until September 18th, 2025.

10. SUPPLIER'S LIABILITIES

As to the performance of work itself, the Service Engineer shall also:

- Follow NEK's rules and procedures,
- Ensure attendance at all required trainings, which must be completed on time and at least one working day before the start of work, or in accordance with the NEK outage plan.
- Have his own procedures for the performance of the whole scope of services based on which the work will be done,
- Provide personal protective equipment (work clothes, work footwear, work gloves, goggles, ...),
- Possess knowledge of the specificity of work at nuclear power plants,
- Pass a security vetting and supporting documents shall be forwarded to the contracting authority.
- Pass a medical examination.
- Be qualified for work in controlled area and fit for duty. During the work he shall do his best to produce as small quantity of radioactive waste as possible,
- Help NEK team for successful performance of the services,
- Be supported by technical advisory office of his company. In case of necessity the anticipated response time is less than 12 hours.
- The Contractor is responsible for the problem evaluation, besides, he shall describe proposed solutions, propose all required activities and documentation, prepare preliminary report and present proposed action solution to Krsko staff.

- If a special tool (to be provided by NEK) is used, the Service Engineer shall use it in a proper way, get appropriate qualification for related work and successful performance of services,
- The Supplier shall perform the services in accordance with NEK's Radiological Protection Requirements,
- Prepare a "Certificate for objects that are brought into the NEK and will also be taken out of the NEK" (ADP-1.8.003, appendix 7.5), where the tools, equipment..., which he plans to bring into the NEK, need to be listed.
- In accordance with the outage plan at the request of the NEK or if necessary, he will also work on Saturdays, Sundays and holidays.
- The final report about work performed shall be delivered to Krsko NPP in 30 days after the work completion.

11. NEK'S LIABILITIES

The Purchaser shall meet his obligations as specified in relevant Appendices. As to the performance itself, he shall also:

- Issue all work orders,
- Submit to the Contractor NPP Krško 2025 Outage Time Schedule,
- Harmonize the performance of particular activity with NPP Krško 2025 Time Schedule and communicate with the control room,
- Provide the necessary technical documentation to the Service Engineer before starting the work.
- Perform all contracted services with NEK's personnel and maintenance work leader,
- Dismantle electrical and other equipment from the components,
- Carry out radiation survey,
- Provide all spare parts,
- Provide metrical & inch tools and devices for maintenance of the said pumps,
- Provide measuring and other tools and instruments with relevant Calibration Certificates,
- Provide personal protective equipment, consumables and other.

12. SPECIAL REQUIREMENTS

N/A

13. QA REQUIREMENTS

The Contractor shall submit a full description of its QA program, proposed for the scope of work to be performed, as controlled copy document, for the Purchaser's review and acceptance/approval.
The Contractor's shall ensure compliance 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", as stated in the NEK specification QS 610, rev.2 - Generic quality assurance program requirements, Appendix 1.

If the Purchaser has already approved the Contractor's QA program, it does not have to be submitted for acceptance/approval. However, if the Purchaser's copy of the QA program is not current, all portions of the program that have been revised since the Purchaser's previous approval shall be submitted for review and acceptance/ approval.
The reporting and posting requirements of Title 10, Code of Federal Regulations, Part 21 (l0CFR21), "Reporting of Defects and Noncompliance", shall apply for this services.

14. APPENDICES

Appendix 1: QS-610, rev. 2 - Generic Quality Assurance Program Specification