
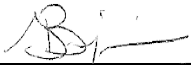



KOEBERG NUCLEAR POWER STATION

TITLE: Provision of Mechanical Maintenance Support Services at Koeberg Operating Unit (KOU) for a period of five (5) years

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DATE: 2026-05-04

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1. DESCRIPTION

This User Requirements Specification (URS) defines the requirements for the provision of comprehensive mechanical maintenance, machining, refurbishment, outage preparation, and outage execution support services for the Koeberg Operating Unit. These services shall be provided during online plant operation as well as during planned outages. The scope of work shall be delivered under an NEC Term Service Contract (TSC) and shall support both planned and emergent maintenance activities across conventional plant and nuclear island systems.

2. CONTRACTING STRATEGY AND EXECUTION

The services shall be contracted under the NEC Term Service Contract (TSC). Work shall be instructed through service orders/task orders in accordance with the defined Scope of Work.

The contract strategy supports collaborative working, transparency of costs, effective risk management, and flexibility to respond to both planned and emergent maintenance requirements. All changes to scope shall be managed through the NEC compensation event process.

The Employer has a need for two distinct services: Outage and Online as per detailed scope of work.

2.1 Execution Strategy for Outage Service

The contract shall be executed strictly in accordance with the agreed scope of work. Upon award, the successful tenderer, in consultation with the Service Manager, will receive a schedule outlining the required activities and their corresponding time windows.

The Contractor shall submit a quotation for each defined scope of work on a fully inclusive basis, which shall be deemed to cover all requirements necessary for the complete and successful execution of the services.

Payment to the Contractor shall be made based on the agreed scope of work and the issued Task Orders.

The Employer will review the submitted quotation and, upon agreement, will issue a Task Order authorising execution of the services.

Any work not included in the original scope shall be subject to mutual agreement between the Employer and the Contractor. Once the additional scope is agreed, a separate Task Order will be issued, and payment shall be based solely on the agreed additional scope of work.

2.2 Execution Strategy for the Online Scope

This scope forms part of a maintenance project. Tenderers shall assess the defined scope of work and submit a quotation accordingly, together with an appropriate execution plan for the Employer's review.

The successful tenderer will be provided with the annual work scope, including an indication of the anticipated monthly workload.

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For planning purposes only, the supplier shall submit an indicative breakdown of the skill categories and an estimated team size. This information shall not form the basis of payment.

Payment shall be made strictly in accordance with the agreed monthly scope of work, irrespective of personnel numbers or resources deployed.

A monthly Task Order will be issued as a progress payment for services delivered in line with the agreed scope.

2.3 Responsibility matrix for outage and online services:

	Empl	Contractor
Coordination	y	Y
Work package preparation		Y
Oversight	y	
Supervision		y
Review and accept permits		y
Productivity		y
Quality		y

The Contractor shall provide supervision for the execution of their work, including conducting pre-job briefs before commencement. The Contractor will be responsible for the quality of work performed by their employees. The Employer will exercise oversight by regularly visiting the work site to ensure compliance with established standards.

3. SCOPE OF WORK

3.1 Outage Work Scope

Provide Outage Services in accordance with the Employer's latest five (5)-year production plan. The Contractor shall carry out all preparatory activities required to ensure safe and efficient outage execution. This includes preparation of work packages, confirmation of material, spare part, tool, and equipment availability, and completion of site inspections and risk assessments. Arrange necessary scaffolding and lifting equipment. Outage work includes, but is not limited to, scheduled maintenance and refuelling outages. The detailed scope of work will be based on the following areas:

- Balance of Plant,
- Vessels and Heat Exchangers,
- Pump house/station,
- Tie-rods scope and
- Machining of plant equipment- Online and Outages.

3.1.1 Balance of Plant tasks.

- Perform routine and corrective maintenance of Balance of Plant equipment, including inspection, removal, and replacement of orifice plates; pump servicing including inspection and repacking; valve overhauls; fan maintenance; filter and strainer replacement; and renewal of V-belts.

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- Additional activities include removal and replacement of blanks and end caps, system and component requalification, removal and refitting of quick connectors and associated piping, system draining and venting, adjustment of pipe supports, and the opening/ closing of tanks.

3.1.2 Vessels and Heat Exchangers

- Carry out inspections and maintenance work on vessels and heat exchangers, including opening and closing of vessels, removal and replacement of baffle plates, plugging of tubes, and installation or removal of bellows.
- Tasks also include water box removal and replacement, removal and refitting of spool pieces, draining of pits and pipelines using submersible pumps, disassembly and assembly of tube bundle components, adjustment of pipe supports, system/component requalification, and all other legitimate mechanical work related to vessels and heat exchangers.

3.1.3 Pump House/Station Services

The Service Provider shall perform inspection, maintenance, repair, and refurbishment activities within the Pump House to ensure continued safe and reliable operation of all associated mechanical systems and equipment.

The scope includes:

- Removal and replacement of pipework to facilitate inspections.
- Removal and replacement of manways.
- Inspection and maintenance of rake screens and drum screens.
- Maintenance of circulating pump coolers.
- Refurbishment of gearboxes.
- Overhaul of valves and actuators.
- Refurbishment of drive trains, including drive shafts and pinion gears.
- Inspection and maintenance of pumps.
- Performance of system draining and venting as required for maintenance activities.
- Removal, replacement, and maintenance of filters.
- Requalification and leak testing of systems at operating pressure.

All work shall be executed in accordance with OEM specifications, applicable safety and quality standards, and the Employer's site procedures. Activities shall be coordinated with the Employer's maintenance schedule to minimize operational disruption.

3.1.4 Tie Rods Service

The Service Provider shall carry out inspection, testing, maintenance, and replacement of tie rods at the Employer's premises.

The scope includes:

- Visual inspection to assess condition and integrity.
- Tightening, adjustment, or realignment of tie rods to restore design tension and performance.
- Removal and replacement of corroded, worn, or damaged tie rods and associated hardware.
- Cleaning, surface protection, and corrosion prevention treatment.
- Supply of all required materials, tools, equipment, and competent personnel.

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- Submission of inspection and test reports, including any recommendations for corrective action.

Compliance with OEM specifications, structural integrity standards, the Occupational Health and Safety Act, and Employer site procedures.

3.1.5 Machining of Plant Equipment – Online and Outage Services

- Perform machining and manufacturing services using lathe machines, milling machines, drilling machines, surface grinders, boring mills, and portable machining equipment.
- These machines will be used onsite to repair, refurbish, or fabricate plant components during both online maintenance and outage activities.
- Provide offsite specialized machining services as required
- Supply semi-skilled personnel on an as-required basis to support machining activities.
- Provision of machinists during both online and outage periods, based on ad hoc requests.
- Specialized offsite machining services for the related scope of work.

3.2 Maintenance Services During Normal Plant Operations

The Contractor shall provide comprehensive preventative and corrective maintenance services, including defect rectification, on plant equipment during online operation. All activities shall be performed safely, efficiently, and in a manner that ensures minimal disruption to plant performance.

The scope of work includes, but is not limited to:

- Centrifuge Service
- Fiberglass Piping Repair and Maintenance
- HDPE Piping Repair and Maintenance
- Maintenance Projects
- Maintenance of Mechanical Rotables
- Emergency On-Line Work:

Inspection, overhaul, and maintenance of Emergency Diesel Generators, boilers, pumps, valves, actuators, dampers, fans, gearboxes, motors, and associated components.

Cleaning, inspection, and replacement of filters, rake and drum screens, and coolers.

Inspection and maintenance of vessels, including hydrostatic testing where required.

Refurbishment of gearboxes and drive trains.

Removal and replacement of pipework, quick connectors, and manways to facilitate inspections.

System draining, venting, requalification, and leak testing at operating pressure.

All work shall be carried out in accordance with approved maintenance procedures, OEM specifications, and applicable safety, environmental, and quality assurance requirements. The Contractor shall maintain proper documentation and records of all maintenance activities in compliance with the Employer's standards and regulatory obligations.

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3.2.1 Centrifuge Service

The Service Provider shall perform inspection, maintenance, repair, and testing of industrial centrifuges installed at the Employer's premises.

The scope includes:

Routine and corrective maintenance, including lubrication, balancing, bearing replacement, and drive system inspection.

- Disassembly, cleaning, and reassembly of centrifuge components in accordance with OEM specifications.
- Replacement of worn or damaged parts and seals using approved materials.
- Vibration analysis and performance testing to verify operational integrity.
- Provision of service reports, calibration/test certificates, and maintenance records.
- Compliance with OEM standards, the Occupational Health and Safety Act, and the Employer's safety and quality management procedures.

3.2.2 Fiberglass Piping Repair and Maintenance

The Service Provider shall perform on/off-site fabrication, repair, and installation of GRP (Glass Reinforced Plastic), FRP (Fiberglass Reinforced Plastic), and RTRP (Reinforced Thermosetting Resin Pipe) fiberglass and similar components at the Employer's premises.

The scope includes:

- Manufacturing, shaping, and installation of fiberglass panels, ducts, and structures as specified.
- Surface preparation, lamination, and finishing to ensure durability and corrosion resistance.
- Repair or reinforcement of existing fiberglass installations where defects are identified.
- Supply of all required materials, tools, equipment, and skilled labour.
- Quality inspection and testing to confirm compliance with project specifications.
- Execution of all works in accordance with relevant industry standards, the Occupational Health and Safety Act, and Employer site safety and environmental procedures.

3.2.3 HDPE Piping Repair and Maintenance

The Service Provider shall perform on-site and off-site fabrication, repair, and installation of HDPE (High-Density Polyethylene) piping systems at the Employer's premises.

The scope shall include:

- Cutting, fusion welding (butt and socket), and jointing of HDPE pipes and fittings.
- Repair of damaged or leaking sections using appropriate HDPE repair techniques.
- Replacement of defective components.

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- Testing and inspection of repaired or newly installed sections to ensure leak-free operation.

All works shall be carried out in accordance with OEM specifications, relevant international standards (such as ISO 4427, ASTM D2657), and the Employer's safety and quality management systems, ensuring reliable and durable HDPE piping performance.

3.2.4 Maintenance Projects

- The Service Provider shall execute on-site maintenance, repair, and functional testing of mechanical equipment, including the SEC Cooling System, Turbine Hall, CTE Chlorination Plant, ACO, CFI, CRF, CEX, ATE activities, and associated pumps.
- The scope encompasses both routine and corrective maintenance, component replacement, alignment and performance verification, and submission of detailed maintenance reports.
- Supply of personnel (e.g. semi-skilled, entry level artisans, etc.) to support:
 - Boiler and diesel generator outages.
 - low-risk, high-volume activities (such as tube plugging and cleaning operations on big mechanical components) to optimize the utilization of qualified resources.
- All works shall be carried out in accordance with OEM specifications, applicable statutory requirements, and the Employer's safety and quality management systems, to ensure the sustained reliability and efficiency of all assets under maintenance.

3.2.5 Maintenance of Mechanical Rotables

- Maintenance, repair, and replacement of mechanical rotatable equipment including valves, motors, pinion gears, submersible pumps, power jacks, and hydraulic pumps in accordance with project specifications and standards.

3.2.6 Emergency On-Line Work:

Provide maintenance support for plant emergencies as directed by the Service Manager.

The specific scope and tasks will be defined and issued through Task Orders.

3.2.7 Defect Priorities & Response Times

The *Contractor* performs plant walk-downs, identifies defects or anomalies related to Mechanical maintenance and ensures that defects are raised on SAP. The *Contractor* attends to activity schedule and prioritises work to prevent production risks and/or violation of *Employer's* maintenance programs.

4. SKILLS CATEGORIES REQUIRED FOR THE SERVICE

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The Tenderer shall ensure the provision of personnel with the necessary qualifications, competence, and authorisations to perform the service in accordance with the agreed scope of work.

The personnel shall collectively cover all functions and responsibilities required for the complete execution of the services, as defined in the scope.

5. TIMING AND PLANNING

Start Date: 01 April 2026

All Outage dates are subject to five (5)-year Production plan.

Estimated Outage Schedule, only for information

Maintenance Outages	Days	Start	End
227	TBC	TBC	TBC
128	TBC	TBC	TBC
228	TBC	TBC	TBC
129	TBC	TBC	TBC
229	TBC	TBC	TBC
130/230	TBC	TBC	TBC
131	TBC	TBC	TBC

5. SHIFT REGIME

- Shift work is only applicable during Outages and subject to written instruction from the Service Manager.
- As and when required, extended hours will apply at the discretion of the Service Manager.

6. TRAINING

6.1 Specific training

- Heat stress
- Radiation Work
- Confined space
- Human Performance
- Foreign Material Exclusion
- Asbestos
- Materials Handling
- Technical assessment (advance measuring Theory and Practical)
- Job specific training will be provided for authorization

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- Plant Systems
- Plant Systems Regulation Training.

6.2 Generic Training

- Medical Verification
- Fitness for Duty Testing (security access screening, drug testing, criminal record verification, etc.)
- PIT Training (1 day)
- Clearance Test (2 hours)
- Safety Induction Course. (Prior to start of work, 1 hour)

This training is required prior to commencement of any preparation on site

7. ACCESS FORMALITIES

After completion of the generic training as stipulated in paragraph 6, the contractor will be issued with a personal Identification Access Card.

8.1 ESKOM SCOPE OF SUPPLY

The Employer`s scope of supply shall be in accordance with the Service Manager`s Service Information, however, in the event the Contractor requires any additional assistance with regards to support of the service, the Contractor shall bring it to the attention of the Service Manager in accordance with the contract.

- Tools for work taking place in the NAB
- Working Procedures, drawings and Permit to Work.
- Radiation Protection coverage and support.
- Waste disposal facilities for generated waste.
- Deck phones only if available

8.2 CONTRACTOR SCOPE OF SUPPLY

The Tenderer shall provide outage and online maintenance support services in accordance with the agreed scope, ensuring work is completed on time and in compliance with all applicable safety and quality requirements. The services shall include, but are not limited to:

- Service and project management
- Execution of all required mechanical and technical activities
- Safety and quality assurance measures
- Provision of tools and equipment as required
- Contract management, invoicing, and meeting attendance as agreed
- Compliance with the FFD standard
- Provision of necessary materials, PPE, and equipment

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At the milestones agreed with the Service Manager, the Contractor submits an electronic report for the Service Manager's acceptance detailing the following:

- A high-level overview of the service including all completed activities.
- Lessons learned.
- Summary of activities not completed and reasons for their incomplete status.
- Summary of KPI's achieved/not achieved.
- Areas for Improvement, and
- Specific responses from the Service Manager relevant to the service.

9. QUALITY REQUIREMENTS

- The Contractor applies and conforms to the quality assurance requirements stated in the Service Information and Task Orders for all work undertaken in connection with the service.

10. REFERENCES

System drawings, Maintenance Manuals and Working Procedures can be made available on Site as required.

- 1) DSG-310-087: Generic service specification
- 2) KSM-015: Maintenance History Records.
- 3) KSM-014: Requirements of Quality Control
- 4) KSA-069: Foreign Material Exclusion
- 5) KSA 147: Investigating, compiling and execution of maintenance work packages
- 6) KSM-020: Post maintenance requalification testing

11. DOCUMENTATION

- (a) The Contractor submits SHE files with completed Construction workbook.
- (b) The Contractor provides FFD documents for all its employees.
- (c) The Contractor provides any document(s) related to the service which the Service Manager requires.

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- (d) The Service Manager provides copies of all applicable Employer standards, working procedures, guides and forms when requested by the contractor.
- (e) The Employer provides access to all available Site documentation required for providing the services.

12. PRICING STRUCTURE

All prices are to be assessed and agreed upon by the Employer informed by the work scope for each Task Order.

13. APPENDICES

N/A

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