



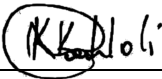
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ESKOM

KOEBERG NUCLEAR POWER STATION

User Requirement Specification

Provide Specialized Ultrasonic services on an as and when required basis at Nuclear Operating Unit

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1. DESCRIPTION

Provide specialized ultrasonic (Phased array, guided wave, etc.) services for requalification of welds, vessels, piping during outages or non-outage periods at the Nuclear Operating Unit.

2. BACKGROUND

The Inspection and Test (I&T) Group is responsible for all non-destructive testing (NDT) services at the Nuclear Operating Unit (NOU). I&T is required to perform requalification ultrasonic inspections on the balance of plant (BOP) work scope following maintenance repair/replacement activities or as per specific engineering requests.

Balance of plant inspections (BOP)

- BOP inspections include two major inspection programmes viz. Flow Accelerated Corrosion (FAC) and Risk Based Inspections (RBI), Pressure Equipment Regulations (PER) / Occupational Health and Safety Assurance (OH&SA).
- BOP inspections are also performed in support of the maintenance major component outages and during repair and replacement activities.
- BOP inspections are performed on safety class 1, 2, 3 and non- safety class systems.

3. SCOPE OF WORK

- The scope of work shall be managed by I&T within the Koeberg processes.
- All NDT personnel shall meet the requirements of KAR-240, "The Qualification and Certification of Inspection & Test personnel and its Sub-Contractors".
- The contractor shall make use of their own procedures and equipment for all work to be performed.
- The procedures shall be reviewed and accepted by the Eskom NDT level 3 before the commencement of any work on the Koeberg plant.
- The ultrasonic equipment with the calibration certifications shall be presented to the Koeberg calibration laboratory for verification before use at Koeberg.

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- The NDT personnel shall undergo “in-house” induction training and be assessed accordingly.
- Personnel are required to work during non-outage, outage periods, or on an as and when required basis.
- The contract scope for all component requalification requirements is based on ASME III (2021) and ASME B31.1 (2018) for repair/replacement activities.

The services required are, but not limited to the list below:

- Ultrasonic inspections of pressure vessel and piping welds
- Ultrasonic wall thickness monitoring of vessels and piping
- Ultrasonic level checks on piping and vessels
- Engineering Ad-hoc requests

4. Skill Development Localization and Industrial (SDL&I)

- Provide PAUT/GUL training to eligible candidates as per the SDL&I criteria.
- The numbers of PAUT/GUL trainees shall be confirmed upfront during the negotiation stage with the successful *Contractor*.

Table 1

Proposed training for NDT	Durations	Objectives	Outcomes
Classroom training to be provided by an external service provider (SAIW, PCN etc.) for PAUT and GUL UT techniques. Pre-selected candidates that meet the SDL&I criteria to be determined between <i>Employer</i> and <i>Contractor</i>	40 hours 40 Hours	To obtain theoretical and practical training in PAUT and GUL	Certified NDT operators in Level 2

5. EQUIPMENT

All equipment and tools shall be provided by the *Contractor* for all work to be performed at the Koeberg plant.

The equipment that will be used must represent the latest technology available, must be reliable and must produce results that will be comparable with future inspection results.

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All equipment and tools needed to perform the activities will be timeously transported to and removed from site. Reserve equipment, tooling, spare parts and material must be available on site or be made available within a very short time frame in case of equipment breakdowns. The Contractor may not cause work delays resulting in schedule changes due to their equipment or personnel.

All contaminated equipment brought on site shall comply with the requirements of IAEA TS-R-1: "Regulation for the safe transport of radioactive materials".

All contaminated equipment transported on or leaving Koeberg site shall comply with the requirements of KAA-634: "Responsibilities for the radioactive material control programme."

The contractor must provide evidence of performing the inspections under strict safety and radiologically considered guidelines.

The *Contractor* shall evaluate and specify in detail its needs for the onsite work to be supplied by the Employer, such as hoisting, scaffolding, shielding, tenting, fluid supplies, HVAC connection, storage and lay down areas.

The *Contractor* is responsible for the equipment provided to it by the *Employer*.

6. DOCUMENTATION

To be included in the Proposal:

- All commercial documentation as required by the tender enquiry
- *Contractor* NDT Certification Procedure (Written Practice)
- Evidence of Eskom *Contractor* Assessment
- List of personnel including qualification and certification
- Availability of equipment to be used for inspection and calibration certificates

To be delivered during the contract:

Personnel certification and qualification records file (one month before start of inspections). This file shall contain, as a minimum the following:

- Name of certified individual
- Level of certification and NDT method
- Educational background and experience records

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- Evidence of satisfactory completion of training
- Vision examination results
- Evidence of successful completion of examinations
- Evidence of satisfactory qualifications if used in lieu of the prescribed examinations (see SNT-TC-1A)
- Name and signature of NDT Level III that verified the qualifications for certification (see SNT-TC-1A)
- Certifications obtained dates
- Certification expiry dates
- Name and signature of certifying authority, e.g. SAIW Examination Manager, *Contractor's Manager* or *Contractor's Designated Individual*

7. CERTIFICATION / QUALIFICATION OF PERSONNEL

- The contractor shall provide NDT personnel who are at least certified as a Level II in Ultrasonic Testing (PAUT/GUL) – welds (all configurations, preferred)
- For all NDT scope of work the certification procedure (written practice) and personnel documentation shall meet the requirements of procedure KAR-240, “The Qualification and Certification of Inspection & Test personnel and its Sub-Contractors”.

8. TIMING AND PLANNING

- The current schedule of outages activities is provided in the Table 2 below and is based on revision 76 of the Koeberg 10-year Outage Plan.
- These dates are subject to change and will be communicated timeously to the *Contractor* during the contract period.
- The service may be required during outages and non-outage periods on “an as and when required” basis.
- A task instruction will be issued based on the actual period the services are required from the *Contractor*.

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Table 2

Activity	Period	Venue
Outage - 128	28 February 2027 to 4 April 2027	Koeberg Operating Unit
Outage - 228	21 February 2028 to 27 March 2028	Koeberg Operating Unit
Outage - 129	11 September 2029 to 10 November 2029	Koeberg Operating Unit
Outage - 229	3 September 2030 to 2 November 2030	Koeberg Operating Unit
Outage - 130	29 April 2031 to 3 June 2031	Koeberg Operating Unit

9. TRAINING AND ASSESSMENT

9.1 General

All staff are to be adequately trained for the execution of the task.

All training shall be completed prior to the start of the services.

9.2 FFD requirements and competencies

- Security Screening Enrolment, Drug test and Criminal Check
(Please note Criminal check takes few days and only once you pass Criminal Check can the following training be booked)
- Medical examination (to be performed externally and medical results presented to FFD Medical Centre)
- Fall Arrest Training to be performed externally and results presented to FFD centre.

It is expected that all contract personnel are competent in the following disciplines:

- Material Handling (Online), assessment at FFD centre
- Plant Induction training (Online), assessment at FFD centre
- Foreign Material Exclusion training (Online), assessment at FFD centre
- Human Performance training (HP) (Online), assessment at FFD centre.
- Radiation Worker training (Classroom) or Requalification (Online) at FFD centre.
- Safety Induction Course at FFD centre

Notes:

1. *Plant Induction Training (PIT) is Koeberg specific and shall be for Eskom's account (4hrs training and 2 hrs for assessment).*

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2. Meeting FFD requirements is entirely the responsibility of the Contractor and all activities described in procedure 335-68 paragraph 5.1 are performed offsite at the cost of the Contractor before its employees will be registered on the FFD system.

10. ITEMS TO BE SUPPLIED BY THE EMPLOYER

- All documentation as required by the tender enquiry and specific procedures shall be submitted by the Employer.

11. EQUIPMENT TO BE SUPPLIED BY THE CONTRACTOR

- The Contractor shall supply his staff with the necessary PPE i.e. hard hats, safety shoes, eye protection, and hearing protection.
- The Contractor shall ensure that the PPE he supplies meet the required SABS standards or equivalent.
- The Contractor shall supply Office space for contractor personnel and storage of equipment

12. QUALITY REQUIREMENTS

The work described in this specification is classified Q2.

13. REFERENCES

- 240-123597661:- Non Destructive Testing – Personnel Certification Requirements
- KAR-240: Requirements for the Authorisation of Inspection / Testing Personnel at Koeberg Nuclear Power Station
- KAR-020:- Authorisation of Inspection and Test Personnel and its Sub-Contractors
- KAA-634:- Responsibilities for the radioactive material control programme
- KAA-751:- Chemical restrictions and controls at Koeberg. (CRACK programme)
- 335-68:- Fitness for duty process requirements for work to be performed inside the owner controlled area of Koeberg Power Station