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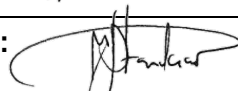
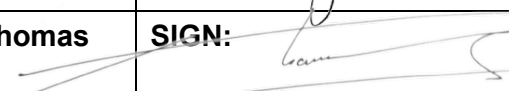
**ESKOM**

**KOEBERG NUCLEAR POWER STATION**

**Inspection & Test**

**User Requirement Specification**

**Provide NON DESTRUCTIVE TESTING (NDT) LEVEL III SERVICES ON  
AN AS AND WHEN REQUIRED BASIS AT NUCLEAR OPERATING UNIT**

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## 1. DESCRIPTION

The provision of Non-destructive Testing (NDT) Level III services on an as and when required basis at Nuclear Operating Unit (NOU)

## 2. BACKGROUND

The NDT Level III service forms part of the In-service Inspection Program Requirements Manual (ISIPRM) requirements as prescribed by ASME XI. The National Nuclear Regulator (NNR) oversees the ISIPRM forms part of Eskom's Nuclear Operating License and the implementation thereof.

The NDT Level III is responsible to verify all inspections performed at the correct prescribed frequency as mandated by the ASME XI code.

These include evaluations and reviews of NDT inspections performed to ensure reliability of the plant's components significant to Nuclear Safety.

It is the responsibility of the NDT Level III incumbent to provide Eskom with the assurance of appropriate code compliance as well as to advise on corrective measures, if required, to ensure Nuclear Safety.

The Level III is also responsible for the reviews and acceptance of all other NDT procedures, certification of supplier personnel who perform work within the NOU.

The NNR closely monitors NOU's compliance to the ISI programme and has the authority to shut the station down in the event of non-compliance. The monitoring is done by routine audits and reviews of the Outage Start-up and Summary Reports, which details all inspections performed during a fuel cycle. The Summary Report also details inspections not performed, the specific reasons for not doing so as well as when it is rescheduled. The Level III is one of the key individuals that review the content of these reports. In doing so, the compliance to the 10-year (interval) schedule is verified and assurance is if all the required inspections are correct and accounted for. The benefit to NOU of having a NDT Level III as part of the ISI team is essential. Therefore; the intention is to go out on tender to contract in this service to NOU during the remainder of the 4<sup>th</sup> and 5<sup>th</sup> ISI interval.

## 3. SCOPE OF WORK

### Activity Listing

The NDT Level III performs the following activities as part of the services for applicable Interval Implementation Activities:

- Compilation or review of procedures, technique sheets and work instructions for NDT (including visual exams).
- Development of pressure test programme, including verification of boundaries, cataloguing bolted connections, buried/obstructed sections and optimization of test boundaries, techniques and criteria.

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- Evaluation and review of NDT results
- Development of NDT techniques and work instructions for specialized applications.
- Providing recommendations regarding the implementation of new or alternative inspection techniques.
- Providing recommendations for the alignment of NOU NDT processes with international practices.
- Review of the ISIPRM 4<sup>th</sup> and 5<sup>th</sup> Interval scope and assessment of technique development and inspection design for interval closure.

#### Support Activities

- Provide technical support for Koeberg's Inspection Qualification strategy ( 240-123588530)
- Provide recommendations for alignment of Augmented Inspections with International practice.
- Assistance in resolving NNR and Authorised Nuclear In-service Inspector (ANII) issues and queries.
- Level III oversight and acceptance of special NDT projects (i.e., RPV 10 year exam, RPV Head CRDM UT & ET exams).
- Certification of NDE personnel.
- Support of emergent repair/replacement issues regarding construction code compliance and development of NDE techniques for re-qualification.
- Support of Risk Informed ISI periodic reviews
- Nuclear Projects Management (NPM) reviews
- Ad hoc requests not listed above

#### The personnel requirements are as follows:-

- A NDE Level III certified in UT, MT, PT, RT, ET and VT (ASME XI) methods, with a minimum of 10 years Nuclear Power Plant related experience.
- ASME Section XI, Pressure Testing Programme experience
- ASME Section XI, Repair/Replacement Programme experience
- ASME Section XI, ISI Programme experience
- RPV automated VT and UT inspection experience
- Certification of NDE personnel experience
- Hydrostatic Test experience desired
- Work Order and Plant Modification Package review experience
- Eddy current testing of heat exchanger tubes experience
- Experience in the following codes: ASME III, ASME V, ASME VIII, ASME IX, ASME B31.1, CODAP, PER, RCCM, RSEM code applications at nuclear power plants.

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#### 4. LABOUR CATEGORIES

- Police Clearance is applicable to all, regardless of country of origin. All International contractors shall be in possession of an Authorization Permit to Work in South Africa obtainable from the Department of Home Affairs
- The Supplier's personnel shall be certified in accordance with their written practice that meets the requirements of procedures 240-123597661 Revision 0 and KAR-240 Rev 5. The authorisation of the personnel shall meet the requirements of procedure KAR-020 Rev 1. The Employer's Inspection and Test Group shall issue this authorisation in writing.

#### 5. TIMING AND PLANNING

The NDT Level III services will be required during outages and non- outage periods. The outage dates and duration, in accordance with the Koeberg 10 Year Production Plan Rev. 75, are as follows:

Activity	Period	Venue
*Outage 227	9 November 2025 to 29 March 2026	Koeberg Operating Unit
Outage 128	9 November 2026 to 14 December 2026	Koeberg Operating Unit
Outage 228	30 August 2027 to 4 October 2027	Koeberg Operating Unit
Outage 129	22 May 2028 to 21 July 2028	Koeberg Operating Unit
Outage 229	12 March 2029 to 11 May 2029	Koeberg Operating Unit
Outage 130	7 January 2030 to 11 February 2030	Koeberg Operating Unit
Outage 230	28 October 2030 to 2 December 2030	Koeberg Operating Unit

Notes:

- The above information and start dates based on NOU production plan Rev 75 and is subject to change. Any changes will be communicated to the supplier timeously.
- \*Outage 227 start date to be confirmed at a later stage.
- The above outage durations are for planning purposes only and does not necessarily reflect the total duration the Level III is required to spend on site.
- The actual start and finish dates shall be stipulated on the Task Instructions issued 3 months before the outage start dates.

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## 6. TRAINING

### 6.1 Generic training

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.

### 6.2 Competency levels

#### FFD

- 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 (including drug test) presented to Koeberg Medical Centre.
- Working at Heights 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 Koeberg
- Plant Induction Training (Online) assessment at Koeberg
- Foreign Material Exclusion training (FME) Online assessment at Koeberg
- Human performance training (HP) Online assessment at Koeberg
- Radiation worker training or Requalification on Site
- Safety Induction Course (On site prior to start of work)

Notes:

1. *Plant induction training (PIT/HP) is Koeberg specific at FFD centre.*
2. *Meeting FFD requirements is entirely the responsibility of the [Contractor/Consultant] and all activities described in procedure 335-68 paragraph 5.1 are performed offsite at the cost of the [Contractor/Consultant] before his/her employees will be registered on the FFD system.*
3. *The applicable training for the individual shall be communicated timeously to the Contractor.*

## 7. ESKOM – KOEBERG'S SCOPE OF SUPPLY

Eskom will supply:

- An office with desk and access to a computer.
- Access to equipment, procedures and documentation.
- All component drawings will be made available to the supplier
- The supplier shall indicate any other support service required from Eskom.

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## 8. QUALITY REQUIREMENTS

The scope of work will be subjected to a Quality Management System in accordance with the requirements of quality specification 238-102 Revision 3, Quality and Safety Management Requirements for Nuclear Suppliers Level 2.

## 9. GENERAL

- The Supplier is to comply with any relevant labour legislation and apply to the Department of Labour for a Ministerial Determination for working in excess of the normal overtime hours stipulated, and receive approval prior to the starting date. The Supplier is to submit the approval to the Employer's Manager prior to the starting date.
- The Supplier is responsible for the Personal Protective Equipment (PPE) for his employees. A coverall, hardhats, safety boots, earplugs, gloves and safety glasses are mandatory safety equipment at the site.

## 10. DOCUMENTATION

The conditions of the NEC Term Services Contract shall apply.

## 11. REFERENCES

- 240-123588530:- Requirements for Inspection Qualification of NDT systems at KNPS
- 240-123597661:- Qualification and Certification requirements for personnel performing non-destructive testing at Koeberg Nuclear Power Station
- 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
- 335-68:- Fitness for duty process requirements for work to be performed inside the owner controlled area of Koeberg Power Station
- 240-119362012:- Fourth Interval In-Service Inspection Programme Requirements Manual (ISIPRM) for Koeberg Nuclear Power Station