Eskom	Procurement SOW	Generation

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PART 3: SCOPE OF WORK

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C3.1: EMPLOYER'S SERVICE INFORMATION

Contents

1 Description of the *service*

1.1 Executive overview

- Each of the six power generating units at Majuba Power Station has a cycle chemistry monitoring system to analyse the quality of condensate, feedwater and steam water samples from various points of the steam/water cycle The objective of which is to create a chemical environment within the steam/water cycle that assures the integrity of the materials of the circuit The existing sample points where water samples are tapped off from the steam/water cycle throughout Units 1-6 include Condenser, Condensate Extraction Pump, Low Pressure Heaters, Deaerator Storage Tank, Economizer inlet, Superheated steam system and stator cooling water system The chemical parameters being measured on each stream include Sodium, Silica, Conductivity, dissolved oxygen and other parameters hence Majuba has installed various online instrumentation

- Most of the equipment's at the laboratory and other chemical plants were installed since commissioning of the plant and most of them are obsolete, expensive to maintain hence there is a need to replace them These equipment's were approved to be purchased to ensure continuation of electricity generation while at the same time preserving Long Term Plant Health

1.2 *Employer*'s requirements for the *service*

- The request for service will be made by means of purchase order
- Delivery is expected within 6 to 8 weeks after receipt of Eskom official purchase order
- The *Contractor* may work with *Employer*'s personnel for training purpose on the use and maintenance of all installed instruments
- The *Contractor* studies the Works Information or scope of work thoroughly and immediately reports any uncertainties, ambiguities or inconsistencies to the *Employer* for further clarity

- The service provider must include provision of original spare parts, consumables required for service, system fully assembled and checked for full functionality

- Except as otherwise stated within the Works Information, the *Contractor* provides all items of expense including management, supervision, safety and quality oversight, competent labour resources, materials, plant, equipment, consumables, new replacement instrument components, planning and organising, documentation, transport and fuel, meals, accommodation etcetera, as necessary to provide the *works* according to the Works Information

- Specification of the *services* to be provided

a) Supplier Delivery Note must indicate partial delivery if partial delivery is made
b) The stock number, quantity and material short description must be stated on the delivery note
c) Each delivery to be recorded on receiving register and each delivery note must have unique number.
d) Each delivery note to state the relevant release order number

1.2.1 Sodium analyser scope of work

The Service Provider must supply and deliver analyzer for the measurement of sodium ions. Complete system with transmitter, sensors, flow cell with sample flow monitoring, passive reagent dosing and device for calibration / random sampling on a 280 x 850 mm stainless steel mounting plate. 100-240 VAC, 50/60 Hz. Each set should include all other consumables required for commissioning and instrument functional checks. These include but not limited to sodium standard solutions, etching kit, electrolyte for sodium reference, air filters, calibration bottle, etc. Include installation and commissioning and training of onsite Eskom personnel on basic instrument maintenance.

- The *Contractor* removes the old spares of sodium analyzers from plant and takes them to the chemistry storage area to be kept as spares

- The consumables and spare parts include but not limited to sensor Sodium, screw plug, sensor Reference Na, sensor pH FL - version AMI Sodium, Reference filling solution 2Mol KCL, Etching kit for sensor Sodium, Sodium standard solution 1'000ppm, Air filter,Tubing kit for

Sodium on single stream mounting panel , Sealing kit for reagent bottle, Diisopropylamine for Synthesis, Repair kit for solenoid and any other necessary repairs or spares upon confirming with the *Employer*

- The *Contractor* services installs Sodium analyzers, conducts the necessary loop checks and verifies them to ensure that continuous monitoring takes place The *Contractor* ensures that the analyzer transmitter measuring range matches the DCS range for each analyzer New equipment should be compatible with Majuba current analyzer structure, there shouldn't be any modification of the plant

Other technical data

ANALYZER: TYPE: SODIUM; RANGE: 0.1-10000 PPB; POWER SOURCE: 100-220 V AC, 24 VDC; RESOLUTION: MINIMUM 3 DIGITS WITH DECIMAL, ACCURACY 5 PCT, RESPONCE TIME 3 MINUTE OR LESS, AUTOMATIC CONTROL OFF PH, AUTOMATIC TEMPERATURE COMPENSATION. GRAB SAMPLE TO BE INCLUDED. VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).

1.2.2 Dissolved Oxygen Analysers

The Service Provider must supply and deliver five (5) sets of dissolved oxygen analyzers including sensors with built-in temperature sensor for stator cooling water system at Majuba P/S. Transmitter / controller for measuring dissolved oxygen in ultrapure water, in a robust aluminium housing for wall mounting.100-240 VAC, 50/60 Hz. Dissolved oxygen analyzer/ instrument is intended to do on field measurements with measuring low levels range of 0-2000ppb. Each set should include all other consumables required for commissioning and instrument functional checks, including but not limited to cables, maintenance set, membranes and Pressure-resistant flow cell for sensors made of stainless steel. Installation should include new sample tubing and valves. Unistrut against pillar for housing of analysers per unit and light inside enclosure. Commissioning and training of onsite Eskom personnel on basic instrument maintenance.

- The *Contractor* removes the old, dissolved oxygen analyzers spares from plant and takes them to the chemistry storage area to be kept as spares

- The *Contractor* **installs new analyzers, supplies spare parts, consumables and adhoc repairs where necessary of 5 X dissolved oxygen analysers to be installed at units 2-6 stator cooling water system.**
- The consumables and spare parts include but not limited to sensor oxytrace replacement kit include 3 spare membranes,50ml filling solution and o ring, Pressure compensation membranes for oxytrace sensor and any other necessary repairs or spares upon confirming with the *Employer*
- The *Contractor* installs Dissolved Oxygen analyzers, conducts the necessary loop checks and verifies them to ensure that continuous monitoring takes place The *Contractor* ensures that the analyzer transmitter measuring range matches the DCS range for each analyzer New equipment should be compatible with Majuba current analyzer structure, there shouldn't be any modification of the plant

1.3 Interpretation and terminology

The following abbreviations are used in this Service Information

Abbreviation	Meaning given to the abbreviation
CPP	Condensate polishing plant
WTP	Water treatment plant
DO	Dissolved oxygen
K25	Specific conductivity/electrical at 25 degrees Celsius
PCB	Printed Circuit board
OEM	Original equipment manufacturer
Na	Sodium
DCS	Digital Control System
SHE rep	Safety health and environment representative
HIRA	Hazard Identification Risk Assessment

OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
SHE	Safety Health and Safety

2 Management strategy and start up.

2.1 The *Contractor or service provider must meet as minimum the following mandatory technical criteria and other* Qualitative Technical Evaluation Criteria:

Mandatory Technical Evaluation Criteria

	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Motivation for the use of Criteria
1.	The demonstration of at least 5 years of experience	Submitting reference letters from previous clients with official letterhead or certificate of the completion of works or the correct supply of components (Previous orders history within Eskom sites can be submitted as proof)	To ensure that the contractor has successfully supplied accepted equipment within the indicated time frame as well as successfully completed works
2	The contractor/supplier has a distribution licensing of the equipment or is the OEM of the product	Submitting a license of distribution rights for the relevant product or the submission of an OEM letter or a letter from the OEM indicating that the supplier has the right to distribute the product	To ensure that the supplier/ contractor delivers the required product and does not change the product due to the inability to obtain the product Also, to ensure that the supplier/contractor delivers a quality product that is supported by the OEM
3	Datasheet and Product Information	Submit the Datasheet and Product Information or Product Data Sheet	To ensure that the product supplied can be used for intended purpose as well as to ensure that the supplier/ contractor delivers the required product and does not change the product due to the inability to attain the required product

2.2 *Contractor*'s management, supervision and key people

The service Technician /Engineer will be required to bring their training certificate or authorisation letter from OEM prior to rendering the service.
The service engineer/ technician will be always allocated a technician from Eskom throughout the service to verify work

2.3 Documentation control

All orders will be sent before work can commence as purchase orders that the contractor must acknowledge and send back
Certificates of calibration must be in an OEM letter head with the specifications and results written properly
Any other communications can be sent on emails to the contract manager in a letter attached to the email

2.4 Invoicing and payment

Within one week of receiving a payment certificate from the *Service Manager* in terms of core clause 51 1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Service Manager*'s payment certificate

The *Contractor* shall address the tax invoice to Invoiceseskomlocal@eskom co za

and include on each invoice the following information

- Name and address of the *Contractor* and the *Service Manager,*
- The contract number and title,
- *Contractor*'s VAT registration number,
- The *Employer*'s VAT registration number 4740101508,
- Description of service provided for each item invoiced based on the Price List,

- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT,

The currency of this contract is the South African Rand

The period within which payments are made is 4 (four) weeks after receipt of a valid invoice

2.5 Contract change management

Eskom Standard forms of contract shall be used

2.6 Records of Defined Cost to be kept by the *Contractor*

Not Applicable for option A

2.7 Training workshops and technology transfer

During installation / assemble of equipment, only authorised and trained technicians can render the service on the equipment's. During the service Eskom technicians will be allocated for on job training and skills transfer from the authorised and trained OEM technician

2.8 Design and supply of Equipment

S/N and specs for the instruments

2.9 Things provided at the end of the *service period* for the *Employer*'s use

2.9.1 Information and other things

- Full-Service report with the calibration information, findings from the service, Required spares if defective and a calibration certificate
- Delivery note
- Service technician/ engineer certificate of competency and authorisation letter if none OEM to work on their analysers
- Service kit list with details of what was supplied during the service

3 Health and safety, the environment and quality assurance

3.1 Health and safety risk management

3 1 1 The Contractor shall comply with the health and safety requirements contained in SHE/OHS Specification and the approved safety file

3 1 2 The 37-2 agreement to be signed by Contractor and Employer representatives

3 1 3 The SHE/OHS professional conducts internal audits at planned intervals to monitor compliance to the contractual health and safety requirements

3 1 4 The Contract Manager conducts inspections at planned intervals to monitor compliance to the contractual health and safety and legal requirements

3 1 5 The Contractor may be selected during internal and/or external Majuba Power Station audits to verify compliance to legal and contractual SHE/OHS requirements The Contract Manager will communicate this at relevant time periods

3 1 6 In addition to the requirements of the applicable laws governing the occupational health and safety, Majuba Power Station OHS requirements particular to the service and the Affected Property for this contract shall be adhered to for the duration of the contract

3 1 7 The minimum requirements for the Contractor to gain access to Majuba Power Station include the but not limited to

3 1 7 1 1 1 Valid Medical fitness certificate

3 1 7 1 1 2 Police clearance

3 1 7 1 1 3 Provision of a Safety officer as and when required on site

3 1 7 1 1 4 Identification document (RSA ID or equivalent)

3.1 7 1 1 5 National Drivers Licence (applicable to drivers)

3 1 7 1 1 6 Majuba Power Station Safety Induction

3 1 7.1 1 7 Adherence to the Eskom Life-saving rules 3 and 4, Be Sober and Buckle up

Rule	Description of rule
3	BUCKLE UP No person may drive any vehicle on Eskom business and/or on Eskom premises Unless the driver and all passengers are wearing seat belts
4	BE SOBER No person is allowed to be under the influence of intoxicating liquor or drugs while on duty

3.1 7 2 Applicable risk-based PPE

3 1 7 3 Valid letter of good standing always (COIDA)

3 1 7 4 Contractual requirements mean the suppliers will submit the tender returnable during the tender close-out The evaluation will take place once the mandatory and Functionality evaluation have been completed The service provider will be given only ONE opportunity to submit the outstanding documents within 7 working days Failure to submit the outstanding documents within the stipulated time, may result in the tenderer being regarded as non-responsive and ineligible for contract award These OHS requirements will form part

of the procurement process and must be complied with prior to signing the contract (Note these requirements are applicable to the tender phase only). The service provider shall comply with the OHS Safety file requirements and no work may commence until the Safety file is approved by the Contract custodian together with the OHS professional

3.1.2 Key Performance Indicators

Contractor/supplier Management Key Performance Indicators (KPI's)

1 Maintain Health and Safety file and compliance to the health and safety plan, Eskom SHE/OHS specification and applicable legislation
2 Always maintain good housekeeping
3 Implement and monitor near miss programme (reporting of near misses)
4 Comply to Planned Job Observation programmes
5 Zero Fatalities
6 At any given point, the OHS performance must be within the lost time injury (LTI) tolerance level as amended
7 All incident investigations shall be completed within 30 days of the occurrence of an incident
8 Incident investigation recommendations shall be closed within the recommended time frame recorded in the Incident investigation report
9 Close audit findings as per the recommended time frames as per audit report or action raised in SAP QIM
10. Close Non-conformance as per the recommended time frames in SAP QIM

3.1.3 Contract completion and sign off

On completion of the project/contract, Eskom team (led by the Contract Manager) involved in the project together with the Contractor shall conduct the final meeting to identify the gaps prior to the contract close out Before the final invoice is paid/processed, the Contract Manager shall ensure that the below requirements are met

a Close all incidents and audit findings

b. Clean the respective yard and ensure good housekeeping where the contractor was working

c Contractor shall submit safety statistics and a safety file to Eskom BU Safety department for closeout and filling

Completion of a closeout report (Annexure D form as per 32-726) to close the contractual work

3.2 Environmental constraints and management

The Supplier shall comply with the environmental criteria and constraints [Environmental Management Requirements for Contractors and Suppliers ENV/GEN/SPEC/01]

The contractor shall ensure that all his/her activities related to manufacturing, supplying, delivering and operation of their product is in line with the relevant environmental legislation

They shall coordinate their activities in line with the requirements of ISO 14001 2015 and Majuba Power Station environmental management system

The contractor shall ensure that in the execution of his/her activities, no contamination of water (either surface or underground), no disturbance of the land and biodiversity within Majuba premises, no waste will be disposed of in an irresponsible manner Disposal of waste should be in line with the Majuba PS Waste Management Work Instruction (ENV/GEN/WI/12)

The contractor shall ensure that his/her practices are in line with Eskom SHEQ Policy (32-727) and Majuba Power Station Environmental Statement of Intent (ENV/STMT/01)

The contractor shall identify and document environmental aspects and impacts which are in line with the scope as per the tender document

3.3 Quality assurance requirements

The contractor shall be in possession of ISO 17025 2017 The supplier/contractor shall complete and sign Form A (Enquiry/Contract/Quality Requirements for Supplier Quality Management Specification 240-105658000/ QM 58 and ISO 17025)

The supplier shall submit a valid copy of ISO 17025 and/or any applicable certificate of a QMS (the latest applicable revision). The QMS should drive the supplier's business management processes to ensure that all of Eskom's requirements are fully met on a consistent basis

The supplier shall submit the latest copy of the management system internal and external audit reports The audit reports must include, if applicable, nonconformity identified, and the resulting remedial actions (correction and/ or corrective action reports)

The supplier shall submit a draft contract quality plan that is specific to the scope of work as described in the tender documents. The plan must address the minimum requirements as per ISO 10005

Where applicable, the supplier shall submit a draft, or an example of an inspection and test plan (ITP) or quality control plan (QCP) on similar and/ or previous work done

The supplier shall submit documented information for Control of Externally Provided Processes, Products and Services

The supplier shall submit a copy of documented information for roles, responsibilities and authorities in relation to the QMS Examples of relevant documented information are, organization charts, job descriptions, work instructions, duty statements, manuals, procedures

The supplier shall submit documented information retained (records) of management review meetings that include agenda, meeting minutes, attendance registers, reports, presentations, etc

Note specific requirements per tender will be selected using the List of Tender Returnable documents (240-12248652)

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed

This section is covered on the NEC document

4.1.2 BBBEE and preferencing scheme

This section is covered on the NEC document

4.1.3 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)

This section is covered on the NEC document

4.2 Subcontracting

4.2.1 Preferred subcontractors

N/A

4.2.2 Subcontract documentation, and assessment of subcontract tenders

N/A

4.2.3 Limitations on subcontracting

N/A

4.2.4 Attendance on subcontractors

N/A

4.3 Plant and Materials

4.3.1 Specifications

- ANALYZER: TYPE: SODIUM; RANGE: 0.1-10000 PPB; POWER SOURCE: 100-220 V AC, 24 VDC; RESOLUTION: MINIMUM 3 DIGITS WITH DECIMAL, ACCURACY 5 PCT, RESPONCE TIME 3 MINUTE OR LESS, AUTOMATIC CONTROL OFF PH, AUTOMATIC TEMPERATURE COMPENSATION. GRAB SAMPLE TO BE INCLUDED. VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).

- ANALYZER: TYPE: DISSOLVED OXYGEN; RANGE: 0-2000 PPB; POWER SOURCE: 100-240 VAC, 50/60 Hz; TRANSMITTER / CONTROLLER FOR MEASURING DISSOLVED OXYGEN IN THE STATOR COOLING WATER DEMINERALIZED WATER, IN A ROBUST ALUMINIUM HOUSINGFOR WALL MOUNTING. VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).

4.3.2 *Contractor*'s procurement of Plant and Materials

- All procured replacement spare items must have warranty unless if it's a consumable
- The contractor is to ensure that all spares supplied are in working order and have a factory test certificate to ensure that they are in good working order.
- The contractor is to ensure that all procured items are handled and delivered in a safe manner
- If an item is delivered and installed with a defect it will be rejected.

4.3.3 Tests and inspections before delivery

- All chemical reagents and standards used must be inspected before use by the process supervisor, the chemicals must be accompanied with certificate of analysis and 16 points SDS
- All spares and service kits must be checked by the process supervisor to check if the correct quantity of spares is supplied by the contractor
- All inspected items must be compactable with Majuba current installed equipment to be replaced
- All items are to be inspected for quality control purposes

4.3.4 Plant & Materials provided "free issue" by the *Employer*

Eskom Majuba Power Station will provide resources to offload the goods being delivered (Cranes and forklift for offloading purposes)

• Instruments are easily accessible no hooking at heights is required

• All permit to work will be done on site by the responsible person prior to contractor working

• Demin and Ultra-pure water will be provided by the chemical services Laboratory section when required

4.3.5 Cataloguing requirements by the *Contractor*

N/A

5 Working on the Affected Property

LAR must be obtained at the control room before any work can commence and permit to work where required

5.1 *Employer*'s site entry and security control, permits, and site regulations

- All equipment that the contractor brings to site must be declare at the security gate.
- The vehicle used must comply with road worthy standards and declared at the gate (car permit)
- Permit to enter the station must be requested 24hours before the contractor can enter the premises
- Information required for the permit

  Id number

  Surname and name

  Company employee number

  Company details

  Emergency number and contact details

  Car registration number, car make, car model car colour

  Duration on site

5.2 People restrictions, hours of work, conduct and records

- All technicians to be involved as and when required must have their details sent to the contract manager before coming to site

5.3 Health and safety facilities on the Affected Property

The contractor shall be using Eskom provided facilities during the services.

5.4 Environmental controls, fauna & flora

These matters are dealt with in the general environmental requirements referred to in section 3.2 above

5.5 Site services and facilities

5.5.1 Provided by the *Employer*

- Instruments are easily accessible, no hooking at heights is required
- All permit to work will be done on site by the responsible person prior to contractor working
- Demin and Ultra-pure water will be provided by the chemical services Laboratory section when required

5.5.2 Provided by the *Contractor*

All service items required to complete the service and repair successfully must be provided by the contractor

5.6 Control of noise, dust, water and waste

- While working at the plant all mandatory signs must be adhered to, if ear plugs/muffs, helmets with a chin strip and googles are mandatory, they need to be always worn
- If there are safety restrictions at the plant the contractor is to work on prior to the work
- The pre-task risk assessment done must indicate as such with mitigations of the safety issue in question

5.7 Tests and inspections

5.7.1 Description of tests and inspections

After service has been provided, each newly installed equipment will be functional checked by the service provider together with Eskom Technician for verification purpose

6 List of drawings

6.1 Drawings issued by the *Employer*

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract

Drawing number	Revision	Title