



NEC3 Term Service

Short Contract (TSSC3)

A contract between Eskom Holdings SOC Ltd
(Reg No. 2002/015527/30)

and

for supply, delivery, installation, and commissioning of
clarifier sludge level detection for cooling and raw
water at Lethabo Power Station for a period of six
(06) months.

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Documentation prepared by:

C1 Agreements & Contract Data

C1.1 Form of Offer and Acceptance

Offer

The Employer, identified in the Acceptance page signature block on the next page, has solicited offers to enter into a contract for the procurement of:

Supply, delivery, installation, and commissioning of clarifier sludge level detection for cooling and raw water at Lethabo Power Station for a period of six (06) months.

The tenderer, identified in the signature block below, having examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	R[•]
Value Added Tax @ 15% is	R[•]
The offered total of the Prices inclusive of VAT is	R[•]
(in words)	

This Offer may be accepted by the Employer by signing the form of Acceptance overleaf and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the Contractor in the conditions of contract identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the
tenderer:**

(Insert name and address of organisation)

Name &
signature of
witness

Date

Tenderer's CIDB registration number:

N/A

Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the conditions of contract identified in the Contract Data. Acceptance of the tenderer's Offer shall form an Agreement between the Employer and the tenderer upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the Contract, are contained in:

Part 1 Agreements and Contract Data, (which includes this Form of Offer and Acceptance)

Part 2 Pricing Data

Part 3 Scope of Work: Service Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be signed by the duly authorised representative(s) for both parties.

The tenderer shall within one week of receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the Contract Data at, or just after, the date this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the tenderer receives one fully completed and signed copy of this document, including the Schedule of Deviations (if any) together with all the terms of the contract along with a contract number that will be generated.

Signature(s)

Name(s)

Capacity

**for the
Employer**

(Insert name and address of organisation)

Name &
signature of
witness

Date

Note: If a tenderer wishes to submit alternative tender offers, further copies of this document may be used for that purpose, duly endorsed, 'Alternative Tender No. _____'

Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		
4		
5		
6		
7		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

For the tenderer:

For the Employer

Signature

Name

Capacity

On behalf of *(Insert name and address of organisation)*

(Insert name and address of organisation)

Name &
signature
of witness

Date

C1.2 Contract Data

Data provided by the *Employer*

Clause	Statement	Data
General		
10.1	The <i>Employer</i> is (Name):	Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state-owned company incorporated in terms of the company laws of the Republic of South Africa
	Address	Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg
	Tel No.	011 800 8111
	Fax No.	N/A
	E-mail address	
If the <i>Employer</i> appoints an <i>Employer's Agent</i> , the <i>Employer's Agent</i> is:		
14.5	Name	
	Address	Lower Germiston Road, Rosherville, Johannesburg, 2095
	Tel No.	011 800 8111
	Fax No.	N/A
	E-mail address	
	The authority of the <i>Employer's Agent</i> is	
11.2(5)	The <i>service</i> is	Supply, delivery, installation, and commissioning of clarifier sludge level detection for cooling water and raw water for research testing and development.
11.2(6)	The Service Information is in	the document called 'Service Information' in Part 3 of this contract.
30.1	The <i>starting date</i> is.	TBC
30.1	The <i>service period</i> is.	6 months
13.2	The <i>period for reply</i> is	1 week
50.1	The <i>assessment day</i> is the	Last day of each month.

50.2	The interest rate on late payment is	Not applicable 5 % of final invoice (paid upon receipt of final report)
80.1	The <i>Contractor</i> is not liable to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property in excess of	the amount of the deductibles relevant to the event
	Does the United Kingdom Housing Grants, Construction and Regeneration Act (1996) apply?	No
93.1	The <i>Adjudicator</i> is	the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).
	Address	[•]
	Tel No.	[•]
	Fax No.	[•]
	e-mail	[•]
93.2(2)	The <i>Adjudicator nominating body</i> is:	the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body
93.4	The <i>tribunal</i> is:	arbitration.
	The <i>arbitration procedure</i> is	the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	South Africa
	The person or organisation who will choose an arbitrator	
	- if the Parties cannot agree a choice or	the Chairman for the time being or his nominee
	- if the arbitration procedure does not state who selects an arbitrator, is	of the Association of Arbitrators (Southern Africa) or its successor body.
The <i>conditions of contract</i> are the NEC3 Term Service Short Contract (April 2013)¹² and the following additional conditions Z1 to Z11 which always apply:		

¹ If the previous edition applies change 'April 2013' for 'September 2009'.

Z1 Cession delegation and assignment

- Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*.
- Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

Z2 Change of Broad Based Black Economic Empowerment (B-BBEE) status

- Z2.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor's* B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.
- Z2.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Employer* within thirty days of the notification or as otherwise instructed by the *Employer*.
- Z2.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the *starting date* the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor's* obligation to Provide the Service.
- Z2.4 Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the *service*.

Z3 Confidentiality

- Z3.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to others except where required by this contract. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to others where required by this contract the *Contractor* ensures that the provisions of this clause are complied with by the recipient.
- Z3.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Employer*.
- Z3.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.
- Z3.4 The taking of images (whether photographs, video footage or otherwise) of the *Employer's* property or any portion thereof, in the course of Providing the Service and after the end of the *service period*, requires the prior written consent of the *Employer*. All rights in and to all such

² State whether attached as a 'PDF' file in terms of Eskom's licence, or to be obtained from Engineering Contract Strategies Tel 011 803 3008, Fax 086 539 1902 or www.ecs.co.za

images vests exclusively in the *Employer*.

Z3.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

Z4 Waiver and estoppel: Add to clause 12.2:

Z4.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties or their delegates or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

Z5 Health, safety and the environment

Z5.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *service*. Without limitation the *Contractor*:

- warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *service*; and
- undertakes, in and about the execution of the *service*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z5.2 The *Contractor*, in and about the execution of the *service*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z6 Provision of a Tax Invoice and interest. Add to clause 50

- Z6.1 The *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer's* procedures stated in the Service Information, showing the correctly assessed amount due for payment.
- Z6.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of clause 51.2 is then calculated from the delayed date by when payment is to be made.
- Z6.3 The *Contractor* is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer's* VAT number 4740101508 on each invoice he submits for payment.

Z7 Notifying compensation events

- Z7.1 If the *Contractor* does not notify a compensation event within one week of becoming aware of the event, he is not entitled to a change in the Prices.

Z8 *Employer's* limitation of liability; Add to clause 80.2

- Z8.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand).

Z9 Termination: Add to clause 90.2, after the words "or its equivalent":

- Z9.1 The contract will be terminated at the end of the four months trial period with the objective of producing viable results or when a business rescue order has been granted against the contractor.

Z10 Addition to Clause 50.4

- Z10.1 If the amount due for the *Contractor's* payment of *delay damages* reaches the limits stated in a Task Order (if any), the *Employer* may terminate the *Contractor's* obligation to Provide the Service.
- Z10.2 If the *Employer* terminates in terms of this clause, the procedures on termination are those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the *service*.

Z11 Ethics

For the purposes of this Z-clause, the following definitions apply:

- Affected Party** means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,
- Coercive Action** means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,
- Collusive** means where two or more parties co-operate to achieve an unlawful or illegal

Action	purpose, including to influence an Affected Party to act unlawfully or illegally,
Committing Party	means, as the context requires, the <i>Contractor</i> , or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractors or the Subcontractor's employees,
Corrupt Action	means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,
Fraudulent Action	means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,
Obstructive Action	means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and
Prohibited Action	means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.

- Z11.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.
- Z11.2 The *Employer* may terminate the *Contractor's* obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the *Employer* has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor's* obligation to Provide the Services for this reason.
- Z11.3 If the *Employer* terminates the *Contractor's* obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.
- Z11.4 A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.

Z12 Insurance

Insurance cover 82

- 82.1 When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.
- 82.2 The *Contractor* provides the insurances in the Insurance Table A, from the *starting date* until the until the earlier of Completion and the date of the termination certificate.

INSURANCE TABLE A

Insurance against	Minimum amount of cover or minimum limit of indemnity
Loss of or damage caused by the <i>Contractor</i> to the <i>Employer's</i> property	The replacement cost where not covered by the <i>Employer's</i> insurance The <i>Employer's</i> policy deductible as at contract date, where covered by the <i>Employer's</i> insurance

Loss of or damage to equipment, plant and materials	<p>The replacement cost where not covered by the <i>Employer's</i> insurance</p> <p>The <i>Employer's</i> policy deductible as at contract date, where covered by the <i>Employer's</i> insurance</p>
The <i>Contractor's</i> liability for loss of or damage to property (except the <i>Employer's</i> property, equipment and other things used to Provide the Service) and for bodily injury to or death of a person (not an employee of the <i>Contractor</i>) arising from or in connection with the <i>Contractor's</i> Providing the Service	<p><u>Loss of or damage to property</u> The replacement cost</p> <p><u>Bodily injury to or death of a person</u> The amount required by the applicable law</p>
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law

82.3 The *Employer* provides the insurances stated in the Insurance Table B

INSURANCE TABLE B

Insurance against or name of policy	Minimum amount of cover or minimum limit of indemnity
Assets All Risk	Per the insurance policy document
Contract Works insurance	Per the insurance policy document
Environmental Liability	Per the insurance policy document
General and Public Liability	Per the insurance policy document
Transportation (Marine)	Per the insurance policy document
Motor Fleet and Mobile Plant	Per the insurance policy document
Terrorism	Per the insurance policy document
Cyber Liability	Per the insurance policy document
Nuclear Material Damage and Business Interruption	Per the insurance policy document
Nuclear Material Damage Terrorism	Per the insurance policy document

Data provided by the *Contractor* (the *Contractor's Offer*)

The tendering contractor is advised to read both the NEC3 Term Service Short Contract (April 2013) and the relevant parts of its Guidance Notes (TSSC3-GN)³ in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on page 24 of the TSSC3 Guidance Notes.

Completion of the data in full is essential to create a complete contract.

10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No. E-mail address	
63.2	The percentage for overheads and profit added to the Defined Cost for people is	N/A
63.2	The percentage for overheads and profit added to other Defined Cost is	N/A
11.2(4)	The Price List is in	the document called 'Price List' in Part 1 of this contract.
11.2(4)	The offered total of the Prices for part of the <i>service</i> in Part 1 of the Price List is [Enter the total of the Prices from the Price List]:	R[•] excluding VAT [in words] [•] excluding VAT

³ Available from Engineering Contract Strategies Tel 011 803 3008, Fax 086 539 1902, or www.ecs.co.za.

C2 Pricing Data

C2.1 Pricing assumptions

The Price List as shown in C 2.2 for work described in the Scope of Work. The work must be carried out within a stated period of time on **a task-by-Task basis and is instructed by Task Order**.

The Price List is in two parts. Part 1 is for work described in the Service Information not requiring the Employer to issue a Task Order. Part 2 is for work to be carried out within a stated period of time on a task by Task basis and instructed by Task Order. The service may comprise work under Part 1 only or Part 2 only or a mix of both.

Entries in the first four columns of Part 1 of the Price List are made either by the Employer or the tenderer. Entries in the first four columns of Part 2 of the Price List would normally be made by the Employer as the Party most likely to know the kind of work which will be instructed by the issue of Task Orders. The tenderer then enters a rate for each item and multiplies it by the Expected quantity to produce the Price to be entered in the final column.

If the Contractor is to be paid an amount for the item which is not adjusted if the quantity of work in the item changes, the tenderer enters the amount in the Price column only, the Unit, Expected quantity and Rate columns being left blank.

If the Contractor is to be paid an amount for the item of work which is the rate for the work multiplied by the quantity completed, the tenderer enters a rate for each item and multiplies it by the Expected quantity to produce the Price, to be entered in the final column.

If the Contractor is to be paid a Price for an item proportional to the length of time for which a service is provided, a unit of time is stated in the Unit column and the expected length of time (as a quantity of the stated units of time) is stated in the Expected quantity column.

The rates and Prices entered for each item includes for all work and other things necessary to complete the item.

C2.2 Price List

Part 1

The rates and Prices entered for each item includes for all work and other things necessary to complete the item.

Item no.	Description	Unit	Quantity	Rate Excell VAT	Total Price Excl VAT
1	Compliance to Safety, Health Environmental and Quality Requirements for this contract	Sum	1		
2	Supply test equipment, Installation, Commissioning and Performance Test for Cooling water clarifier (For a period of 3 months)	Item	1		
3	Removal of the test equipment supplied for the Cooling water supplied (From Item 2)	Item	1		
4	Installation, Commissioning and Performance Test for Raw water clarifier, instrument obtained from Item 3 (For a period of 3 months)	Item	1		
5	Maintenance of Sludge level detector at the Cooling water pilot plant	Month	3		
6	Maintenance of Sludge level detector Raw water pilot plant	Month	3		
7	Monthly feedback reports for Cooling Water Pilot plant tests	Month	3		
8	Monthly feedback reports for Raw Water Pilot plant tests	Month	3		
9	Final research report Cooling water pilots plant tests (two be received within two weeks after the experimental work has been completed)	Sum	1		
10	Final research report Raw water pilots plant tests (two be received within two weeks after the experimental work has been completed)	Sum	1		
11	Training on the technology (for Three people)	Number of people	3		

Total of the Prices for Part 1

IMPORTANT NOTES

All rates/price and amount' cells must be completed.
All prices MUST EXCLUDING VAT and ESCALATIONS
Prices MUST be quoted based on the SCOPE provided

The expenses are:**Note:**

Travel expenses will be claimed according to Eskom's Travel and subsistence guidelines (see below) substantiated by documentary proof. Disbursements will be approved and signed off by the *Employer's Agent* and claimed at cost.

No.	Expense item
Traveling Km's	<ul style="list-style-type: none">• Claims must specify from where to where and for what purpose. (I.e., Contractor's place of work to Lethabo power station)
Eskom's km rate	R4,32 k/m
Car Rental	<ul style="list-style-type: none">• Group B or similar• At least have 2 airbags• Air-conditioning• ABS brakes for safety purposes• The consultant(s) to facilitate their own bookings and payment arrangements
Accommodation	<ul style="list-style-type: none">• Maximum 3 Star, bed and breakfast not exceeding R1350 per night.• Contractors to facilitate their own bookings and payment arrangements.
Flights reimbursable	<ul style="list-style-type: none">• Economy class• Contractors to facilitate their own bookings and payments

C3: Scope of Work

C3.1 Service Information

1. Description of the *service*

1.1 Background Information

The cooling water (CW) and Raw water clarifiers are currently de-sludged either manually by the plant operators or de-sludged via a time-based system. This is not optimal as the sludge level is critical for the operation of the system. If the sludge is too high, floc carryover occurs resulting in high turbidity and possible scale formation in the cooling water system. The recovery of ash into the clarifiers also increase the high level of hardness salts in the sludge pockets and hence the frequency and duration of sludge blowdown needs to be adjusted. Sludge level detectors aid in the automation and control of water treatment clarifiers and will thus be of value to plant operations. The aim of this project is to install sludge level detectors that are suitable for Eskom CW and Raw water systems at Lethabo Power Station.

1.2. Employer's requirements for the service

Supply, delivery, installation, and commissioning of clarifier sludge level detection for cooling water and raw water for research testing and development.

The Sludge level detectors to be delivered, installed and commissioned at Lethabo Power Station.

Testing of the Sludge level detector will be conducted over a period of 6 months whereby the detector will be first installed at the raw water clarifier for a period of 90 days to collect data, then moved to the cooling water clarifier for a period of 90 days to collect data.

Submit project proposals for the online detection and continuous recording of sludge levels in CW and Raw Clarifiers. The employer shall approve the proposal before the start of the service.

Provide the employer with monthly reports, the reports must include all the operational and analysis of the data, commissioning, and maintenance philosophy of all testing equipment.

The deliverables includes:

- Detailed technical specification of the sludge level indicator to be installed including among others: drawings, operating ranges, sensitivities, limits of detection, equipment limitations, materials of construction etc.
- Method statement on the instrument will be installed in the existing plant and an indication of any required modifications.
- The supplier must include provision of a data logger with a minimum recording of one data point every 30 minutes.
- The data from the data logger must be able to be downloaded and exported to excel.
- The supplier will be required to provide a weekly data download of the sludge levels.
- The supplier must provide a proposal on how the sludge levels displayed on the instrument will be validated.
- Installation requirement of the technology (mechanical, electrical, C&I, civil, structural etc) for the demonstration.
- Utility requirements (electricity, water, etc).
- Information on the operating and maintenance requirements of the detector (operating and maintenance manuals).
- The cost of the demonstration equipment (it must include supply, delivery, installation, and

commissioning).

- The operating cost of the sludge level detector.
- The supplier must provide an indication of cost to relocate the instrument to the same site or different site and associated equipment should it be required (transport cost in rands per kilometre, removal, re-installation, and commissioning costs).
- Indicate any exclusions from the supplier and modifications to be undertaken by the Employer.
- The expected lead time for installation.
- The supplier must operate and maintain (including providing for all consumables and spares) the demonstration.
- Detailed training plan to train the Employers staff to operate and maintain the technology.
- Provision of operating data for 90 days from an existing and operational Cooling Water clarifier.
- Provision of operating data for 90 days from an existing and operational Raw water clarifier.

2. Specification of Product or Goods

The required Sludge level detectors are for both Raw water and Cooling water Clarifiers and the product must be:

- Be accurate and reliable.
- Ease of operation.
- Record and save data.
- Have the capability to display data locally and remotely.
- Have the capability to allow for the trending of data on remote systems.
- Online Operation (Not field operation) and capable of being connected to PLCs' or DCSs'.
- Easy to Install (Available as stand-alone system)
- Suitable for CW lime treatment system and coagulation/flocculation systems.
- Suitable for Raw system coagulation/flocculation systems.
- Measure Turbidity (as low as <0.2 NTU)
- Easy to maintain.
- Cost effective.
- Able to operate at flow rates ranging from 0 m³/hr to 3750 m³/hr.
- Monitor blanket levels continuously i.e. 24 hours a day, 7days a week, 365 days a year.

The entire pilot plant system including the detectors must be compatible with the following water qualities:

Typical Cooling water quality.

Component	Units	Limit/Range
Turbidity	NTU	As low as cost effectively possible but < 100 NTU for continuous operation
Conductivity	$\mu\text{S.cm}^{-1}$	Conforms to the cycles of concentration being used but generally < 4000 $\mu\text{S.cm}^{-1}$
pH		Range: 8.1 to 8.6 @ 25 °C. Optimum pH is 8.3
"P" alkalinity	mg.kg-1	< 7,5 mg.kg-1 as CaCO_3
"M"alkalinity	mg.kg-1	Depending on CCPP
Calcium	mg.kg-1	200 to 500 mg.kg-1 as CaCO_3
Reactive Silica	mg.kg-1	< 150 mg.kg-1 as SiO_2
Chloride	mg.kg-1	< 400 mg.kg-1 as Cl
Sodium	mg.kg-1	< 500 mg.kg-1 as Na
Phosphate	mg.kg-1	< 0,5 mg.kg-1 as PO_4^{3-}
OA	mg.kg-1	< 20 mg.kg-1
COD	mg.kg-1	< 200 mg.kg-1
TOC		As low as economically possible
Ammonia	Mg.kg-1	<40 mg.kg-1 as NH_4
Sulfate	Mg.kg-1	<u>Poor quality concrete</u> – Stations < 250 mg.kg-1 250 mg.kg-1 <u>High quality concrete</u> – Stations < 1500 mg.kg-1 if Na^+ < 500 mg.kg-1 < 1000 mg.kg-1 if Na^+ >500 mg.kg-1

Raw water data

Component	Units	Vaal
Chloride	mg/kg	13.6
Calcium Hardness as CaCO_3	mg/kg	54.2
Magnesium Hardness as CaCO_3	mg/kg	58.8
Total Hardness as CaCO_3	mg/kg	113
Potassium	mg/kg	5.28
Conductivity at 25 °C	$\mu\text{S/cm}$	320
m-alk	mg/kg	101.5
Sodium	mg/kg	23
pH		8.52
Silica	mg/kg	11.5
Sulfate	mg/kg	43.7
Total Organic Carbon as C	mg/kg	6.46
Turbidity	NTU	30.9
Temperature	°C	25

Interpretation and terminology

The following abbreviations/word/phrases are used in this Scope Document.

Abbreviation	Meaning given to the abbreviation
CW	Cooling Water
OA	Oxygen Absorbed
TOC	Total Organic Carbon
CCPP	Calcium Carbonate Precipitation Potential
C&I	Control and Instrumentation
COD	Chemical Oxygen Demand
DCS	Distributed Control System
PLC	Programmable Logic Controllers

Title	Date or revision	Tick if publicly available
<u>General Specifications:</u>		
Occupational Health and Safety Act	Latest revision	√
Environmental requirements	ISO 14001:2015	√

3. Constraints on how the *Contractor* Provides the Service

The contractor shall comply to the Eskom site rules and regulations applicable at the Power stations.

3.1 Meetings

- Kick-off meeting and close out meeting shall be arranged by the Employer.
- Progress meetings shall be arranged by the employer.

Interval	Location	Attendance by:
Monthly	At the site	<i>Employer, Contractor, Agents and Others as required</i>

All meetings shall be recorded using minutes or a register prepared and circulated by the convenor of the meeting. Records of these meetings shall be submitted to the Employer by the person convening the meeting within five days of the meeting.

Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the conditions of contract to carry out such actions or instructions. Confirmation of contract communications during operational meetings will, however, be considered as formal acknowledgement of receipt of a contract communication

3.2 Use of standard forms

In the administration of this contract the following templates shall be used where necessary.

- Early warning template
- Compensation event template
- Project Completion Certificate (CoC) template
- Database Summary Payment template
- Payment Declaration Form

3.3 Invoicing and payment

In terms of core clause 50 the *Contractor* assesses the amount due and applies to the *Employer* for payment. The *Contractor* applies for payment with a tax invoice addressed to the *Employer* as follows:

The *Contractor* includes the following information on each tax invoice:

- Name and address of the *Contractor*
- The contract number and title;
- *Contractor's* VAT registration number;
- The *Employer's* VAT registration number 4740101508;
- The total of
 - The Price for each lump sum item in the Price List or Task Order which the *Contractor* has completed;
 - Where a quantity is stated for an item in the Price List or Task Order, an amount calculated by multiplying the quantity which the *Contractor* has completed by the rate,
- Other amounts to be paid to the *Contractor*;
- Less amounts to be paid by or retained from the *Contractor*;
- The change in the amount due since the previous payment being the invoiced amount - excluding VAT, the VAT and including VAT;
- (add other as required)

The *Contractor* attaches the detail assessment of all work done for each item in the Price List to each tax invoice showing

- the Price for each lump sum item in the Price List or Task Order which the *Contractor* has completed and
- where a quantity is stated for an item in the Price List or Task Order, an amount calculated by multiplying the quantity which the *Contractor* has completed by the rate.

All invoices to be addressed as follows:

Eskom Holdings SOC Ltd
Research, Testing and Development
Rosherville,
Cleveland
Johannesburg

3.4 Records of Defined Cost

N/A

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

If the ASGI-SA requirements are to be included in this contract specify constraints which *Contractor* must comply with after contract award in regard to any ASGI-SA requirements. The ASGI-SA Compliance Schedule completed in the returnable tender schedules is reproduced here. If ASGI-SA does not apply, delete this paragraph.

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Accelerated and Shared Growth Initiative - South Africa in accordance with and as provided for in the *Contractor's* ASGI-SA Compliance Schedule stated below

The *Contractor* shall keep accurate records and provide the *Employer* with reports on the *Contractor's* actual delivery against the above stated ASGI-SA criteria. [Elaborate on access to and format of records and frequency of submission etc.]

The *Contractor's* failure to comply with his ASGI-SA obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.

3.6 BBBEE and preferencing scheme

The Contractor must comply with all the requirements of Broad Based Black Economic Empowerment (B-BBEE) or preferencing scheme measures.

4. Requirements for the plan

The contractor provides the employer with Eskom execution plan which shall be approved by the employer.

5. Services and other things provided by the *Employer*

The Employer will provide connection point for electricity during the service period.

The Supplier will be expected to work on site between Monday to Friday 8am-5pm

6. Property affected by the *service*

The service will be at Eskom Lethabo Power station Cooling water and Raw water clarifiers.

Task Order	
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Task Order form for use when work within the service is instructed to be carried out within a stated period of time on a Task by Task basis

Task Order No. [●] service .[●]

To: [●].....
..... (Contractor)

I propose to instruct you to carry out the following task:

Description	[•]
Starting date	[•]
Completion Date	[•]
Delay damages per week	[•]

Please submit your price and programme proposals below.

Signed: _____ Date _____

(for *Employer*)

(for *Employer*)

Total of Prices for items of work on the Price List
(details attached) R. _____

Total of Prices for items of work not on the Price List
(details attached). R. _____

Total of the Prices for this Task Order R _____

The programme for the Task is [ref] (attached)

Signed: Date

(for *Contractor*)

I accept the above price and programme and instruct you to carry out the Task

Signed: _____ Date: _____

(for *Employer*)

(for *Employer*)