



## NEC3 Term Service Contract (TSC3)

**Between ESKOM HOLDINGS SOC Ltd  
(Reg No. 2002/015527/30)**

**and [Insert at award stage]  
(Reg No. \_\_\_\_\_)**

**for The Refurbishment of White Bearings**

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**Contents:**

**No of  
pages**

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**[•]**

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**CONTRACT No. [Insert at award stage]**

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## PART C1: AGREEMENTS & CONTRACT DATA

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[to be inserted from Returnable Documents at award stage]	
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## C1.1 Form of Offer & Acceptance

### Offer

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

### Refurbishment of White Metal Beatings

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto 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.

Options A or C	The offered total of the Prices exclusive of VAT is	R
Option E	The first forecast of the total Defined Cost plus the Fee exclusive of VAT is	R
	Sub total	R
	Value Added Tax @ 15% is	R
	The offered total of the amount due inclusive of VAT is <sup>1</sup>	R
	(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance 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 Date witness

Tenderer's CIDB registration number:

<sup>1</sup> This total is required by the *Employer* for budgeting purposes only. Actual amounts due will be assessed in terms of the *conditions of contract*.

## 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 C1            Agreements and Contract Data, (which includes this Form of Offer and Acceptance)

Part C2            Pricing Data

Part C3            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 Returnable 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.

The tenderer shall within two weeks 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 original copy of this document, including the Schedule of Deviations (if any).

Signature(s)

Name(s) \_\_\_\_\_

Capacity \_\_\_\_\_

for the            **Eskom Holdings SOC Limited**  
Employer        **Kendal Power Station**  
                    **Private Bag X 7272**  
                    **Witbank**  
                    **1035**

Name &  
signature of  
witness \_\_\_\_\_

Date \_\_\_\_\_

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

## Schedule of Deviations to be completed by the *Employer* prior to contract award

Note:

1. 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	_____ <i>(Insert name and address of organisation)</i>	_____ <b>Eskom Holdings SOC Limited</b> <b>Kendal Power Station</b> <b>Private Bag X 7272</b> <b>Witbank</b> <b>1035</b>
Name & signature of witness	_____	_____
Date	_____	_____

## C1.2 TSC3 Contract Data

### Part one - Data provided by the *Employer*

Clause	Statement	Data
<b>1</b>	<b>General</b>	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option:	
		<b>A: Priced contract with price list</b>
	dispute resolution Option	<b>W1: Dispute resolution procedure</b>
	and secondary Options	
		<b>X1: Price adjustment for inflation</b>
		<b>X2: Changes in the law</b>
		<b>X17: Low service damages</b>
		<b>X19: Task Order</b>
		<b>Z: <i>Additional conditions of contract</i></b>
	of the NEC3 Term Service Contract April 2013 <sup>1</sup> (TSC3)	
10.1	The <i>Employer</i> is (name):	<b>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</b>
	Address	<b>Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg</b>
	Tel No.	<b>011 800 2111</b>
10.1	The <i>Service Manager</i> is (name):	<b>Nolutho Mgiijima</b>
	Address	<b>Eskom Holdings SOC Limited Kendal Power Station Private Bag X 7272 Witbank 1035</b>
	Tel	<b>043 703 2760</b>
	e-mail	<a href="mailto:Mgiijmn@eskom.co.za">Mgiijmn@eskom.co.za</a>

11.2(2)	The Affected Property is	<b>Kendal Power Station</b>
11.2(13)	The <i>service</i> is	<b>Refurbishment of White Metal Bearings</b>
11.2(14)	The following matters will be included in the Risk Register	<b>Safety file on Contract award</b>
11.2(15)	The Service Information is in	<b>Part 3: Scope of Work and all documents</b>
12.2	The <i>law of the contract</i> is the law of	<b>the Republic of South Africa</b>
13.1	The <i>language of this contract</i> is	<b>English</b>
13.3	The <i>period for reply</i> is	<b>3 working days</b>
<b>2</b>	<b>The Contractor's main responsibilities</b>	Data required by this section of the core clauses is also provided by the <i>Contractor</i> in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data
21.1	The <i>Contractor</i> submits a first plan for acceptance within	<b>2 weeks of the Contract date</b>
<b>3</b>	<b>Time</b>	
30.1	The <i>starting date</i> is.	<b>31 August 2023</b> <b>Eight (8 weeks) for normal supply and delivery</b>  <b>Two (2 weeks) for action plan</b> <b>Two (2 weeks) refurbishment and delivery</b>
30.1	The <i>service period</i> is	<b>60 months (5 years) completion date of each purchasing order is to be agreed and confirmed with the employer</b>
<b>4</b>	<b>Testing and defects</b>	<b>Testing and defect on suppliers' site before delivered to Kendal power Station. Final quality inspection will be done at main stores at Kendal Power Station for exception of goods and services. If a test or inspection shows that any work has a defect, the supplier corrects the defect and the test or inspection is repeated.</b>
<b>5</b>	<b>Payment</b>	
50.1	The <i>assessment interval</i> is	<b>No assessment</b>
51.1	The <i>currency of this contract</i> is the	<b>South African Rand</b>
51.2	The period within which payments are made is	<b>8 weeks</b>
51.4	The <i>interest rate</i> is	<b>the publicly quoted prime rate of interest (calculated on a 365-day year) charged by from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands</b>

<b>7</b>	<b>Use of Equipment Plant and Materials</b>	Using lifting machine and mobile equipment for handling material to ensure offloading were safety do so.
<b>8</b>	<b>Risks and insurance</b>	
80.1	These are additional <i>Employer's</i> risks	<p>1. Additional to clause 80.1 of the TSC3, the following are Employer's risk</p> <p>2. Natural disaster</p> <p>3. Unavailability of the Power station</p>
<b>9</b>	<b>Termination</b>	Refer to Core Clause 90
<b>10</b>	<b>Data for main Option clause</b>	
<b>A</b>	<b>Priced contract with price list</b>	
20.5	The <i>Contractor</i> prepares forecasts of the final total of the Prices for the whole of the service at intervals no longer than	<b>4 weeks.</b>
<b>C</b>	<b>Target contract with price list</b>	
20.4	The <i>Contractor</i> prepares forecasts of the total Defined Cost for the whole of the service at intervals no longer than	<b>2 weeks.</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	<p>The <i>Adjudicator</i></p> <p>Address</p> <p>Tel No.</p>	<p>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 <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a>). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).</p> <p>Eskom Holding SOC Ltd (reg no:2002/015527/30), a state-owned company incorporated in terms of the company laws of the Republic of South Africa</p> <p><b>011 800 2111</b></p>
W1.2(3)	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 Institution of Civil Engineers (London) (see <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a> ) or its successor body.
W1.4(2)	The <i>tribunal</i> is:	arbitration
W1.4(5)	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 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 of **the Association of Arbitrators (Southern**  
state who selects an arbitrator. is **Africa) or its successor body.**

X1	Price adjustment for inflation
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The proportions used to calculate the Price Adjustment Factor are:

linked to index Index prepared by  
for

L-1	SEIFSA
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**non-adjustable**

1.00

**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**

Low Service Damage Description	Value of Low Service Damages	Limit of Low Service Damage
Service delays not finishing as per agreed upon project plan submitted and approved by the Eskom Service Manager	0.5% per total value of the Task orders for the outage per day	Limited to 10% of the total value of the Task Order(s) for the outage
Submission of documents not as per agreed upon Contract Document Submittal Schedule in this service agreement	0.25% per total value of the Task orders for the outage per day	Limited to 10% of the total value of the Task Order(s) for the outage
Non-response of NCR within 14 days	0.25% per total value of the Task orders for the outage per day	Limited to 10% of the total value of the Task Order(s) for the outage
Delivery of Bearings without Completed Data books and QCP's.	0.25% per total value of the Task orders for the outage per day	Limited to 10% of the total value of the Task Order(s) for the outage
Defect(s) due to poor quality from the	0.5% per total value of the Task orders for the	Limited to 10% of the total value of the Task Order(s)

	Contractor's work performed.	outage per day	for the outage
<b>X19</b>	<b>Task Order</b>		
X19.5	The <i>Contractor</i> submits a Task Order programme to the <i>Service Manager</i> within <b>7 days of receiving the Task Order</b>		
<b>Z</b>	<b>The <i>additional conditions of contract</i> are</b> <b>Z1 to Z14 always apply.</b>		

## **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 Joint ventures**

- Z2.1 If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the *Employer* for the performance of this contract
- Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *Service Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.
- Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

## **Z3 Change of Broad Based Black Economic Empowerment (B-BBEE) status**

- Z3.1 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.
- Z3.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Service Manager* within thirty days of the notification or as otherwise instructed by the *Service Manager*.
- Z3.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor's* obligation to Provide the Service.
- Z3.4 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 P1, P2 and P4 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

## **Z4 Confidentiality**

- Z4.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. 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 in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.
- Z4.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Service Manager*.
- Z4.3 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.
- Z4.4 The taking of images (whether photographs, video footage or otherwise) of the Affected 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 *Service Manager*. All rights in and to all such images vests exclusively in the *Employer*.
- Z4.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

## **Z5 Waiver and estoppel: Add to core clause 12.3:**

- Z5.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the Service Manager 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.
-

**Z6 Health, safety and the environment: Add to core clause 27.4**

Z6.1 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*:

- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Affected Property;
- 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 the *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.

Z6.2 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.

**Z7 Provision of a Tax Invoice and interest. Add to core clause 51**

Z7.1 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 in accordance with the *Employer's* procedures stated in the Service Information, showing the amount due for payment equal to that stated in the payment certificate.

Z7.2 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 core clause 51.2 is then calculated from the delayed date by when payment is to be made.

Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) 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.

**Z8 Notifying compensation events**

Z8.1 Delete the last paragraph of core clause 61.3 and replace with:

If the *Contractor* does not notify a compensation event within eight weeks of becoming aware of the event, he is not entitled to a change in the Prices.

**Z9 Employer's limitation of liability**

Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)

Z9.2 The *Contractor's* entitlement under the indemnity in 82.1 is provided for in 60.1(12) and the

*Employer's liability under the indemnity is limited to compensation as provided for in core clause 63 and X19.11 if Option X19 Task Order applies to this contract.*

**Z10 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":**

Z10.1 or had a business rescue order granted against it.

**Z11 Ethics**

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

<b>Affected Party</b>	means, as the context requires, any party, irrespective of whether it is the <i>Contractor</i> 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,
<b>Coercive Action</b>	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,
<b>Collusive Action</b>	means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,
<b>Committing Party</b>	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,
<b>Corrupt Action</b>	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,
<b>Fraudulent Action</b>	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,
<b>Obstructive Action</b>	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
<b>Prohibited Action</b>	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**

**Z 12 .1 Replace core clause 83 with the following:**

**Insurance cover 83**

- 83.1 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.
- 83.2 The *Contractor* provides the insurances stated in the Insurance Table A from the *starting date* 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	<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>
Loss of or damage to 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>
Loss of or damage to Equipment	<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, Plant and Materials and Equipment) and liability 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

ificates from his insurer or broker stating that the insurances required by this contract are in force.

83.4 The Contractor provides the insurances stated in the Insurance Table A from the starting date until the earlier of Completion and the date of the termination certificate.

Z 12.1

Replace core  
clause 83 with  
the following:

Insurance  
cover

83

83.3

Insurance against	Minimum amount of cover or minimum limit of indemnity
Loss of or damage caused by the Contractor to the Employer's property	The replacement cost where not covered by the Employer's insurance.  The Employer's policy deductible as at Contract Date, where covered by the Employer's insurance.
Loss of or damage to Plant and Materials	The replacement cost where not covered by the Employer's insurance.  The Employer's policy deductible as at Contract Date, where covered by the Employer's insurance.
Loss of or damage to Equipment	The replacement cost where not covered by the Employer's insurance.  The Employer's policy deductible as at Contract Date, where covered by the Employer's insurance.
The Contractor's liability for loss of or damage to property (except the Employer's property, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) arising from or in connection with the Contractor's Providing the Service	<u>Loss of or damage to property</u> The replacement cost  <u>Bodily injury to or death of a person</u> The amount required by the applicable law.
Liability for death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law

INSURANCE TABLE A

86

**Z 12.2**  
**Repl**  
**ace core**  
**clause 86**  
**with the**  
**following**  
**:**

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

#### **INSURANCE TABLE B**

Insurance  
by the  
*Employer*

<b>Insurance against or name of policy</b>	<b>Minimum amount of cover or minimum limit of indemnity</b>
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

### **Z13 Nuclear Liability**

Z13.1 The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.

Z13.2 The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 47 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z13.3 Subject to clause Z13.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z13.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 47 of 1999, or any replacement section dealing with the same subject matter.

Z13.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.



**Insurance  
by the  
Employer**

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86.2 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
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Z13.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 47 of 1999, or any replacement section dealing with the same subject matter.

Z13.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

## **Z14 Asbestos**

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

<b>AAIA</b>	means approved asbestos inspection authority.
<b>ACM</b>	means asbestos containing materials.
<b>AL</b>	means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL.
<b>Ambient Air</b>	means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.
<b>Compliance Monitoring</b>	means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.
<b>OEL</b>	means occupational exposure limit.
<b>Parallel Measurements</b>	means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.
<b>Safe Levels</b>	means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.
<b>Standard</b>	means the <i>Employer's</i> Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.
<b>SANAS</b>	means the South African National Accreditation System.
<b>TWA</b>	means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

Z14.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

Z14.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor's* expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z14.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z14.3 The *Employer* manages asbestos and ACM according to the Standard.

Z14.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration

of  
above

the AL for asbestos, immediate control measures are implemented and relevant air

monitoring conducted in order to declare the area safe.

- Z14.5 The *Contractor's* personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.
- Z14.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.
- Z14.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer's* expense, and conducted in line with South African legislation.

## C1.2 Contract Data

### Part two - Data provided by the *Contractor*

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	% %
11.2(14)	The following matters will be included in the Risk Register	
11.2(15)	The Service Information for the <i>Contractor's</i> plan is in:	
21.1	The plan identified in the Contract Data is contained in:	
24.1	The key people are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job: Responsibilities: Qualifications: Experience:	
		CV's (and further key person's data including CVs) are in .
<b>A</b>	<b>Priced contract with price list</b>	
11.2(12)	The <i>price list</i> is in	
11.2(19)	The tendered total of the Prices is	<b>R</b>

<b>C</b>	<b>Target contract with price list</b>
11.2(12)	The <i>price list</i> is in
11.2(20)	The tendered total of the Prices is <b>R</b>
<b>E</b>	<b>Cost reimbursable contract</b>
11.2(12)	The <i>price list</i> is in

**PART 2: PRICING DATA**  
**TSC3 Option A**

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	2
C2.2	The <i>price list</i>	[•]

## C2.1 Pricing assumptions: Option A

### 1. How work is priced and assessed for payment

Clause 11 in NEC3 Term Service Contract (TSC3) core clauses and Option A states:

<b>Identified and defined terms</b>	11 11.2	(12) The Price List is the <i>price list</i> unless later changed in accordance with this contract.
		(17) The Price for Services Provided to Date is the total of <ul style="list-style-type: none"><li>the Price for each lump sum item in the Price List which the <i>Contractor</i> has completed and</li><li>where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the <i>Contractor</i> has completed by the rate.</li></ul>
		(19) The Prices are the amounts stated in the Price column of the Price List. Where a quantity is stated for an item in the Price List, the Price is calculated by multiplying the quantity by the rate.

This confirms that Option A is a priced contract where the Prices are derived from a list of items of service which can be priced as lump sums or as expected quantities of service multiplied by a rate or a mix of both.

### 2. Function of the Price List

Clause 54.1 in Option A states: "Information in the Price List is not Service Information". This confirms that instructions to do work or how it is to be done are not included in the Price List but in the Service Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Service in accordance with the Service Information". Hence the *Contractor* does **not** Provide the Service in accordance with the Price List. The Price List is only a pricing document.

### 3. Link to the *Contractor's* plan

Clause 21.4 states "The *Contractor* provides information which shows how each item description on the Price List relates to the operations on each plan which he submits for acceptance". Hence when compiling the *price list*, the tendering contractor needs to develop his first clause 21.2 plan in such a way that operations shown on it can be priced in the *price list* and result in a satisfactory cash flow in terms of clause 11.2(17).

### 4. Preparing the *price list*

Before preparing the *price list*, both the *Employer* and tendering contractors should read the TSC3 Guidance Notes pages 14 and 15. In an Option A contract, either Party may have entered items into the *price list* either as a process of offer and acceptance (tendering) or by negotiation depending on the nature of the service to be provided. Alternatively the *Employer*, in his Instructions to Tenderers or in a Tender Schedule, may have listed some items that he requires the *Contractor* to include in the *price list* to be prepared and priced by him.

It is assumed that in preparing or finalising the *price list* the *Contractor*:

- Has taken account of the guidance given in the TSC3 Guidance Notes relevant to Option A;
- Understands the function of the Price List and how work is priced and paid for;
- Is aware of the need to link operations shown in his plan to items shown in the Price List;
- Has listed and priced items in the *price list* which are inclusive of everything necessary and incidental to Providing the Service in accordance with the Service Information, as it was at the time of tender, as well as correct any Defects not caused by an *Employer's* risk;
- Has priced work he decides not to show as a separate item within the Prices or rates of other listed items in order to fulfil the obligation to complete the *service* for the tendered total of the Prices.
- Understands there is no adjustment to items priced as lump sums if the amount, or quantity, of work within that item later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the (lump sum) Prices is as a result of a compensation event.

#### 4.1. Format of the *price list*

(From the example given in an Appendix within the TSC3 Guidance Notes)

Entries in the first four columns in the *price list* in section C2.2 are made either by the *Employer* or the tendering contractor.

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 tendering contractor 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 an item of work which is the rate for the work multiplied by the quantity completed, the tendering contractor enters the rate which is then multiplied by the Expected Quantity to produce the Price, which is also entered.

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.



## C2.2 the *price list*

### 5. 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.

No.	Plant Area	Description	Stock Number	Price/item (each)	Est Unit quantities	Total price
1.	Milling Plant	Trunnion Bearing - (Mill DE & NDE)  LINER: TYPE BEARING, SIZE 507 MM WD X 2.3 M LG X 156 MM THK, MATERIAL STEEL, PART NUMBER: F0067A	177168		30	
2.	Milling Plant	Mill Motor Bearing  BEARING: TYPE: MILL MOTOR; INSIDE DIAMETER: 160 MM; MATERIAL: WHITE METAL; DUTY HEAVY; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	177190		35	
3.	Draught Plant	6 1/2" SAFL Bearings - (ID Fan DE & NDE)  BEARING, SLEEVE: TYPE: PA FAN; INSIDE DIAMETER: 6-1/2 IN; OUTSIDE DIAMETER: 12 IN; LENGTH: 6-1/2 IN; MATERIAL: STL SAFL; PART NO: CS13-31-2-1	178560		15	
4.	Draught Plant	FAN BEARING (DE & NDE) 10"  BEARING, SLEEVE: INSIDE DIAMETER: 255 MM; OUTSIDE DIAMETER: 410 MM; LENGTH: 270 MM; MATERIAL: STL; SAFL; FD FAN DE/NDE; PART NO: CS131121,	177155		15	
5.	Draught Plant	FAN BEARING (DE & NDE) 12"  BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 305 MM; OUTSIDE DIAMETER: 470 MM; LENGTH: 335 MM; MATERIAL: STL BABBITTED	177156		10	
6.	Draught Plant	FD Fan motor NDE  BEARING, SLEEVE: INSIDE DIAMETER: 250 MM; OUTSIDE DIAMETER: 390 MM; LENGTH: 220 MM; MATERIAL: WHITE METAL; ID FAN MOTOR DE/NDE; DRAWING NO: BP4405; PART NO: 86-739	34810		15	
7.	Draught Plant	Motor DE & NDE  BEARING, SLEEVE: INSIDE DIAMETER: 140 MM; OUTSIDE DIAMETER: 255 MM;	34774		10	

		LENGTH: 140 MM; MATERIAL: WHITE METAL; PA FAN MOTOR DE AND NDE; DRAWING NO: BP3671-19; PART NO: HB86/543				
8.	Draught Plant	Motor NDE  BEARING, SLEEVE: INSIDE DIAMETER: 160 MM; OUTSIDE DIAMETER: 248 MM; LENGTH: 140 MM; MATERIAL: WHITE METAL; FD FAN MOTOR NDE; DRAWING NO: BP4273/160-6; PART NO: 86-686	34808		15	
9.	Draught Plant	BEARING, SLEEVE: INSIDE DIAMETER: 200 MM; OUTSIDE DIAMETER: 315 MM; LENGTH: 175 MM; MATERIAL: WHITE METAL; FD FAN MOTOR DE; DRAWING NO: BP4390-6; PART NO: 86-685	34807		15	
10	Boiler Feed Pumps	Journal Bearing HSS (set) =2 bearings - Renk Gearbox  BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 70 MM; OUTSIDE DIAMETER: 110 MM; MATERIAL: STL; HIGH SPEED SIDE SET FOR USE ON RENK STEP DOWN; TYPE GEARBOX; WIDTH 70MM; MODEL NO: TA25X;	34811		10	
11	Boiler Feed Pumps	Journal Bearing LSS (set) = 2 bearings – Renk Gearbox  BEARING, SLEEVE: TYPE: LSS(SET); INSIDE DIAMETER: 95 MM; OUTSIDE DIAMETER: 140 MM; MATERIAL: WHITE METAL; FOR USE ON RENK STEP-DOWN GEARBOX; STYLE: JOURNAL; TYPE::; WIDTH: 65MM; MODEL NO: TA25X;	34812		10	
12	Boiler Feed Pumps	Thrust bearing (set) = 2 bearings – Renk Gearbox  BEARING, THRUST: INSIDE DIAMETER: 55 MM; OUTSIDE DIAMETER: 111 MM; WIDTH: 36 MM; MATERIAL: STL; FOR USE ON RENK STEP DOWN GEARBOX; STYLE PAD SET; MODEL NO: TA25X	31584		15	
13	Boiler Feed Pumps (Four Lobe Bearing)	Journal bearing complete DE (EZVR18) – BFP Motor(Four Lobe Bearing)  BEARING, SLEEVE: TYPE: SHELL DE; INSIDE DIAMETER: 181 MM; OUTSIDE DIAMETER: 320 MM; LENGTH: 185 MM; MATERIAL: STL BABBITTED; FOR USE ON ELECTRIC FEED PUMP MOTOR; PART NO: EZVR18-180	34764		20	
14	Boiler Feed Pumps (Four Lobe Bearing)	Journal bearing complete NDE (EZVR18) – BFP Motor(Four Lobe Bearing)  BEARING, SLEEVE: TYPE: SHELL NDE; INSIDE DIAMETER: 181 MM; OUTSIDE DIAMETER: 320 MM; LENGTH: 185 MM; MATERIAL: STL BABBITTED; FOR USE ON ELECTRIC FEED PUMP MOTOR; PART NO: EZVR18	34813		20	

15	Boiler Feed Pumps (Four Lobe Bearing)	Journal bearing complete EXITOR (EZVQ11-110) – BFP Motor(Four Lobe Bearing)  BEARING, SLEEVE: MATERIAL: STL; FOR USE ON ELECTRIC FEED PUMP MOTOR EXITOR END; PART NO: EZVQ11-110; ID: 110mm	34765		15	
16	Boiler Feed Pump	BEARING, THRUST: MATERIAL: WHITE METAL; STYLE: PAD; FOR USE ON SULZER FEED PUMP; ARTICLE NO: 104-187-177-500; MODEL NO: HPTPK300-350; WD 75MM X LG 63 MM x THK x 20MM	250970		50	
17	Main Cooling Water NDE	250 Bore Frame, Size 28 HSR Bearing. ID = 250mm+/- 0.05.  BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 250 MM; OUTSIDE DIAMETER: 540 MM; LENGTH: 260 MM; MATERIAL: STL	177116		54	
18	Main Cooling Water DE	200 Bore Frame, Size 22 HSR Bearing. ID = 200mm+/- 0.04  BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 240 MM; OUTSIDE DIAMETER: 380 MM; LENGTH: 220 MM; MATERIAL: STL; REFERENCE NO: 311.01, UNK; HSRE 22/200/200/200/SAS, UNK; SET  CW PUMP MAIN DRIVE END BEARING * COMPLETE WITH HOUSING.	177115		54	
19	Main Cooling Water	Thrust Pads; ID 249.98 + 0.02mm	33145		216	
20	Other	BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 140 MM; OUTSIDE DIAMETER: 200 MM; LENGTH: 255 MM; MATERIAL: BRZ BABBITTED; PART NO: SAVB3175.1	177160		8	
21	CEP radial pads	Thrust pad lower bearing(DE)  PAD, BEARING: TYPE: LOWER; DIMENSIONS: THK 22 MM; MATERIAL: STL GR 43A BS 4360; SLIDING; THRUST; WHITE METAL FACED, B.S.3332/2; TURBINE MAIN CONDENSATE EXTRACTION PUMP; ITM.NO: 26.06.31; PART NO: 37-7,	45053		216	
22	CEP surge pads	Thrust pad upper Bearing(NDE)  UPPER THRUST PADS * 12MM THICK * SLIDING TYPE BEARING PAD * MATERIAL: STEEL B.S.4360 GR 43A * WHITE METAL FACED * B.S.3332/2 * TURBINE MAIN CONDENSATOR EXTRACTION PUMP * PART NO: 38.73/38.75 * ITM NO:26.06.31 *	45054		216	
23	CEP Thrust Pad	Bearing pad Journal  PAD, BEARING: DIMENSIONS: WD 120 X LG 68 MM; MATERIAL: WHITE METAL GM4; FACED BS3332/2; SLIDING; ITEM NO: 26.06.31; 1 EA COMPRISING 8 BEARING	33213		216	

		PADS; PART NO: 38-1				
24	CEP NDE	BEARING, PILLOW BLOCK: INSIDE DIAMETER: 294 MM; BLOCK SIZE: WD 470 X LG 925 X HT 780 MM; SHAFT HEIGHT: 455 MM; HOUSING MATERIAL:	177165		54	
25	CEP Motor DE	BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 210 MM; OUTSIDE DIAMETER: 254 MM; LENGTH: 130 MM; MATERIAL: WHITE METAL; SUPPL P/N: BP3997	177159		54	
26	CEP Motor NDE	BEARING, SLEEVE: TYPE: BUSH; INSIDE DIAMETER: 150 MM; OUTSIDE DIAMETER: 194 MM; LENGTH: 85 MM; MATERIAL: STL BABBITTED; SUPPL P/N: BP3996; GLACIER, NON DRIVE END, WHITE METAL, FOR TURBINE ON EXTRACTION PUMP	33201		54	
27	CEP DE	SLEEVE, SHAFT: TYPE: PUMP; INSIDE DIAMETER: 130 MM; OUTSIDE DIAMETER: 160 MM; LENGTH: 205 MM; MATERIAL: STL; GRADE: 1.4034.02/CR2 03; SUPPL P/N: 52-2; TURBINE MAIN CONDENSATE EXTRACTION, TYPE HOVC400X4DE-KOND, ITEM NO 26.06.31	004505 1		54	
Total price						

.....  
**SUPPLIER**

.....  
**SIGNATURE**

.....  
**DATE**

The total of the Prices

## PART 3: SCOPE OF WORK

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	Total number of pages	

## C3.1: EMPLOYER'S SERVICE INFORMATION

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## 1 Description of the service

### 1.1 Executive overview

The purpose of this contract is to provide white metal bearings and thrust pads refurbishment service at Kendal Power Station from Unit 1 to Unit 6 as per the service information;

The scope includes, collecting the damaged bearings from Kendal Power station warehouse/stores, assessing the damage, re-metaling, machining ,testing and delivering the components back to Kendal site

### 1.2 Employer's requirements for the service

Refer to scope of work

	SOW	Engineering
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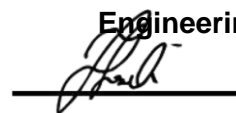
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**Date:**

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### CONTROLLED DISCLOSURE

## **1. INTRODUCTION**

This *Contract* scope of work is for the provision of transportation and off-site refurbishment for Kendal Power Station white metal bearings.

The high-level scope is for the collection of the bearings from Kendal Power Station Stores, stripping, cleaning, visual inspection, dimensional inspection of critical components, re-metalling, testing/certification and transportation back to bearings back to Kendal stores.

## **2. SUPPORTING CLAUSES**

### **2.1 SCOPE**

This scope of work is applicable to the white metal bearings used at Kendal Power Station used to reduce friction between rotating shafts and stationary support members in plant systems.

#### **2.1.1 Purpose**

The objective of this scope of work is to provide minimum specification requirements for the refurbishment of Kendal Power Station's white metal bearings.

#### **2.1.2 Applicability**

This document shall apply throughout Kendal Power Station.

#### **2.1.3 Effective date**

This document is effective from the date of authorization.

### **2.2 NORMATIVE/INFORMATIVE REFERENCES**

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

#### **2.2.1 Normative**

- [1] ISO 9001 Quality Management Systems
- [2] QM 58 – Supplier Contract Quality Requirements Specifications
- [3] ISO 9001: Quality Management Systems.
- [4] OHSA Act: Occupational Health and Safety Act 85 of 1993 (Pressure Equipment Regulation 2009).
- [5] BS 7585: Part 1: 1992, Metallic multilayer plain bearings, Method for non-destructive ultrasonic testing of bond. (Equivalent to ISO 4386-1: 1992)
- [6] BS 7585: Part 2: 1992, Metallic multilayer plain bearings, Method for destructive testing of bond for bearing metal layer thicknesses  $\geq 2$  mm. (Equivalent to ISO 4386-2: 1992)

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- [7] BS 7585: Part 3: 1992, Metallic multilayer plain bearings, Method for non-destructive die penetrant testing. (Equivalent to ISO 4386-3:1992)
- [8] SABS ISO 695/703-1971, South African Bureau of Standards Standard Specification for White Metals (metric units).
- [9] GGSS 0526 – Eskom Standard Specification for the Re-Metalling of White Metal Bearings

### **2.2.2 Informative**

- [10] ISO 14001:2004 Environmental Management Systems
- [11] ISO 900:2008 Quality Management Systems – Fundamentals and Vocabulary
- [12] \*1017401 Kendal Integrated Risk Management Procedure
- [13] \*1018332 Kendal Environmental Management Procedure for contractors work instruction
- [14] ISO 14001:2004 Environmental Management Systems
- [15] ISO 900:2008 Quality Management Systems – Fundamentals and Vocabulary
- [16] \*1017401 Kendal Integrated Risk Management Procedure
- [17] \*1018332 Kendal Environmental Management Procedure for contractors work instruction

## **2.3 DEFINITIONS**

**Thrust Pad:** designed to transfer high axial loads from rotating shafts with minimum power loss, while simplifying installation and maintenance.

**Four Lobe Bearing:** fixed lobe bearing is made up of a number of fixed circular arc segments called lobes. The lobes are separated by axial lubricant supply grooves. Four lobe bearing has four fixed lobes.

**White metal Bearing:** are made from white metal alloys, which can include tin, lead, zinc, and bismuth. White metal bearings are beneficial in that they offer an extended service life under normal operating conditions. When it comes to excess momentary overloads, these bearings also perform well. When there is an alignment or lubrication problem, the white metal bearing can compensate with greater ease than other types of bearings.

## **2.4 ABBREVIATIONS**

<b>Abbreviation</b>	<b>Explanation</b>
QCP	Quality control Plan
NCR	Non Conformance Report
SE	System Engineer

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## **2.5 ROLES AND RESPONSIBILITIES**

- (a) The relevant plant System Engineer (SE) is the plant owner responsible for compiling the scope of work, specifying technical/functionality requirements and ensuring that work is performed in accordance with applicable Eskom standards. The SE also assists with the review of quality control plans
- (b) The Contracts Manager is responsible to manage and administer the execution of the approved scope of work.
- (c) Maintenance and Outage department are responsible for booking damaged bearings at stores.
- (d) The Contracts Manager or his delegate issues a Task Order for refurbishment with the contractor.
- (e) The Contractor performs the scope of work issued as per the requirements of this Works Information and adheres to all specified standards.

## **2.6 PROCESS FOR MONITORING**

N/A

## **2.7 RELATED/SUPPORTING DOCUMENTS**

N/A

# **3. THE CONTRACTOR'S SCOPE**

## **3.1 GENERAL TECHNICAL REQUIREMENTS**

All white metal bearings refurbishment must be performed in accordance to Eskom's Stock descriptions unless specified by Eskom Engineering.

### **3.1.1 Technical Requirements**

- (f) Submit QCP to *Employer* for approval.
- (g) Only after the QCP has been approved can the work start.
- (h) All oil ports, oil ways, holes, grooves and recesses shall be free from debris or any obstruction that may restrict oil flow.
- (i) All edges and corners shall be free of burrs, rags and slivers.
- (j) The bearing back shall be free from burrs, bruises or other damage, which may interfere with the correct seating of the bearing in the housing.
- (k) The lining shall be free from inclusions, porosity, blisters, blow holes and any defects which may reduce the integrity of the lining. No defects shall be allowed in the load carrying area and near any jacking oil ports or oil ways.

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- (l) The supplier shall determine the method of casting and heat treatment or cooling to achieve the desired material properties and ensure bond integrity
- (m) Chemical Composition of lining material on the damaged bearings to be tested before any refurbishment work. The same lining material to be used and shall conform to SABS 695/698-1971 Unless otherwise specified by Eskom, no lead based white metals shall be used

### **3.1.2 Shell Cleaning and Preparation**

- (a) The following minimum steps are suggested for the preparation of a bearing shell prior to relining. Should the manufacturer's method differ significantly, this shall be brought to Eskom's attention for approval prior to relining.
- (b) Prior to tinning, the shell shall be thoroughly degreased with a suitable solvent degreaser. If size permits the shell should be degreased in a solvent tank.
- (c) Old white metal shall be removed by immersion in a melting off pot if size permits, alternatively using a blowpipe.
- (d) Old oil or grease should be burned out with a blowpipe if the surface remains contaminated after the above treatments.
- (e) Any portions of the surface, which remain contaminated or highly polished, should be filed or ground.
- (f) Parts, not to be relined, should be protected, by coating with whitewash or washable distemper and drying.
- (g) Bolt holes, water jacket apertures, lubrication ports etc., should be plugged with a removable filler and dried before relining.

### **3.1.3 Surface finish**

- a) The supplier shall determine the method of machining to achieve an even surface finish free from waviness, high spots and surface defects.

### **3.1.4 Distortion**

- a) The supplier shall be responsible for ensuring that the mating faces of bearing halves are matched and that the internal circumference of the bearing is round or for elliptical bearings to the required dimensions.
- b) Where possible, the bearing housing should accompany the bearing to be re-metalled.
- c) The bearing outside diameter must be checked for conformance to original specifications.
- d) No re-metalling shall be carried out if doubt exists that the bearing can be refurbished without excessive distortion.

### **3.1.5 Verification and Tests**

- a) The supplier shall record all the relevant dimensions and features of the bearing on a check sheet to be submitted together with the finished bearing.

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- b) The supplier shall determine the degree of bonding by means of an ultrasonic method complying with BS 7585 Part 1, or equivalent method. Personnel performing ultrasonic testing shall be qualified in terms of Eskom Standard ESKASAAA3.
- c) The supplier shall hard stamp the bearing with the relevant bearing or job number.
- d) Prior to pouring, the supplier shall carry out detailed chemical analyses of the bearing material used by means of a suitable spectrometric test method.
- e) The supplier shall check the bearing for straightness and cylindricity by means of a suitable method/s.
- f) The findings are to be recorded on the dimensional verification sheet.
- g) The supplier shall inspect the surface finish and record the condition on the dimensional verification sheet. For all turbine bearings, boiler feed pump bearings and prototype bearings, a controlled sample using the same melt shall be poured and metallographically examined. The micrograph is to be recorded and included as part of the quality documents.

### **3.1.6 Materials**

- a) All bearing lining materials used shall conform to SABS 695/698-1971 or an equivalent material specification. Equivalent specifications are to be submitted to Eskom for approval.
- b) The bearing lining material required shall be specified in annex A - Information sheet.
- c) In the absence of any material specification, the material to be used shall be selected from table 1.
- d) If the application is not reflected in table 1, the material used shall be as prescribed in SABS 695-1971 WM 90 or SABS 696-1971 WM 84.
- e) Only virgin white metals shall be used in applications requiring the conditions stated in SABS 695-1971 WM-90 and SABS 695-1971 WM-84.
- f) Unless otherwise specified by Eskom, no lead based white metals shall be used.

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SABS Specification Number	SABS Alloy Number	Chemical Composition	% min	% max	Typical application
SABS 695-1971	WM 90	Tin Antimony Copper Lead Nickel Cadmium Iron Zinc Aluminium Other elements (total)	88.5 6.0 2.5 - - - - - -	91.5 8.0 3.5 0.3 0.05 0.05 0.05 0.01 0.01 0.3	FD, ID and PA fan bearings.
SABS 696-1971	WM 84	Tin Antimony Copper Lead Iron Zinc Other elements (total)	82.0 9.0 5.0 - - - -	86.0 11.0 7.0 0.3 0.05 0.01 0.3	Turbine and generator bearings, thrust bearings, gearbox bearings.
SABS 697-1971	WM 80	Tin Antimony Copper Lead Iron Zinc Other elements (total)	78.0 8.0 5.0 5.0 - - -	82.0 10.0 7.0 8.0 0.05 0.01 0.3	As for WM 84
SABS 698-1971	WM 72	Tin Antimony Copper Lead Iron Zinc Other elements (total)	70.0 9.0 5.0 10.0 - - -	74.0 11.0 7.0 14.0 0.05 0.01 0.3	Motor bearings, pump bearings, compressor bearings.

**Table 1: Suggested material requirements for Eskom applications**

### **3.1.7 Bonding**

All bearings shall meet the following requirements with respect to bonding:

- four classes of bonding are detailed in table 2;
- In the absence of any specification the requirements of table 2 shall apply;
- Applications not reflected in table 2 shall be bonded to at least class B bond.
- For cast iron bearings where bonding is difficult, the supplier shall ensure that the shell is thoroughly cleaned and tinned to achieve maximum bond strength.

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<b>Bond Class</b>	<b>Requirements</b>	<b>Applications</b>
<b>Class A</b>	All areas of the lining shall be 100% bonded. No defective areas shall be permitted.	High speed or highly loaded bearings. Turbine and generator bearings, turbo compressor bearings.
<b>Class B</b>	A total bonded area of 95 % shall be achieved. All joints, edges and loaded areas shall be 100 % bonded. No one area of bad bonding shall exceed more than 3 % of the total area of the bearing surface.	PA, FD and ID fan bearings. Boiler feed pumps.
<b>Class C</b>	A total bonded area of 90 % shall be achieved. All joints, edges and loaded areas shall be 100 % bonded. No one area of bad bonding shall exceed more than 5 % of the total area of the bearing surface.	Medium loaded bearings. Pumps compressors, gearboxes, electric motors.
<b>Class D</b>	A total bonded area of 80 % shall be achieved. No defective bonding shall be permissible at the joints or edges. No one area of bad bonding shall exceed 10 % of the total bearing area.	Tube mill trunnion bearings, bearings with dovetail grooves.

**Table 2: Bond Classes**

### **3.1.8 Documentation**

The supplier submit the below documentation with each delivery:

- Detailed bond test certificate.
- Applicable NDT certificates.
- Detailed chemical analysis certificate showing actual analysis of the cast and the requirements of the material specification.
- A drawing and dimensional verification sheet indicating all relevant final machined dimensions and machined clearances.
- A completed quality control plan certificate

### **3.1.9 Packaging**

- The supplier shall ensure that the bearing is properly packaged to prevent damage or deterioration during transportation, handling and storage.

## **3.2 DETAILED SCOPE OF WORK**

### **3.2.1 Refurbishment:**

- The collection and transportation of Bearings from and to Kendal Power Station Eskom Stores.
- The *Contractor* is responsible for the safekeeping of white metal bearings, and accountable for any missing, lost or damaged bearing spares.
- Packaging: The supplier shall ensure that the white metal bearings and thrust pads is properly packaged to prevent damage or deterioration during transportation, handling and

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storage. The packaging is to be marked with the white metal bearing KKS number for reference.

- d) The *Contractor* is to perform an as-found assessment and submit a detailed report in PDF format to Eskom Contract Manager, QC and Engineering. All damaged components to be included in the report. The contractor is to invite Eskom QC and Engineering for the assessment.
- e) The *Contractor* to generate a Quality Control Plan for the approval of Eskom QC and Engineering prior to any work being performed.
- f) All parts are to be cleaned properly, corroded parts to be sandblasted
- g) Stripping of Bearings and marking all parts with unique numbers relevant to job number.
- h) Small parts be marked with relevant job number.
- i) Re-metalling of Bearings in compliance to section 3 of this document.
- j) Machining of the bearing bores. In the cases of four lobe bearings, machining of the lobes to specifications.
- k) The *Contractor* is only to deliver the White Metal bearings back to Eskom Kendal PS Stores after all intervention points are signed off on the Quality Control Plan by Eskom QC and Engineering.
- l) The contractor to be available for site installation where required.

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### 3.2.2 Metal Journal, Four Lobes and Thrust Pads Specification

No.	Plant Area	Description	Stock Number	Price/item (each)	Est Refurbishment quantities for 60 Months
1.	Milling Plant	Trunnion Bearing - (Mill DE & NDE)  LINER: TYPE BEARING, SIZE 507 MM WD X 2.3 M LG X 156 MM THK, MATERIAL STEEL, PART NUMBER: F0067A	<b>177168</b>		<b>30</b>
2.	Milling Plant	Mill Motor Bearing  BEARING: TYPE: MILL MOTOR; INSIDE DIAMETER: 160 MM; MATERIAL: WHITE METAL; DUTY HEAVY; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	<b>177190</b>		<b>35</b>
3.	Draught Plant	6 1/2" SAFL Bearings - (ID Fan DE & NDE)  BEARING, SLEEVE: TYPE: PA FAN; INSIDE DIAMETER: 6-1/2 IN; OUTSIDE DIAMETER: 12 IN; LENGTH: 6-1/2 IN; MATERIAL: STL SAFL; PART NO: CS13-31-2-1	<b>178560</b>		<b>15</b>
4.	Draught Plant	FAN BEARING (DE & NDE) 10"  BEARING, SLEEVE: INSIDE DIAMETER: 255 MM; OUTSIDE DIAMETER: 410 MM; LENGTH: 270 MM; MATERIAL: STL; SAFL; FD FAN DE/NDE; PART NO: CS131121,	<b>177155</b>		<b>15</b>
5.	Draught Plant	FAN BEARING (DE & NDE) 12"	<b>177156</b>		<b>10</b>

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		BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 305 MM; OUTSIDE DIAMETER: 470 MM; LENGTH: 335 MM; MATERIAL: STL BABBTTED			
6.	Draught Plant	FD Fan motor NDE  BEARING, SLEEVE: INSIDE DIAMETER: 250 MM; OUTSIDE DIAMETER: 390 MM; LENGTH: 220 MM; MATERIAL: WHITE METAL; ID FAN MOTOR DE/NDE; DRAWING NO: BP4405; PART NO: 86-739	<b>34810</b>		<b>15</b>
7.	Draught Plant	Motor DE & NDE  BEARING, SLEEVE: INSIDE DIAMETER: 140 MM; OUTSIDE DIAMETER: 255 MM; LENGTH: 140 MM; MATERIAL: WHITE METAL; PA FAN MOTOR DE AND NDE; DRAWING NO: BP3671-19; PART NO: HB86/543	<b>34774</b>		<b>10</b>
8.	Draught Plant	Motor NDE  BEARING, SLEEVE: INSIDE DIAMETER: 160 MM; OUTSIDE DIAMETER: 248 MM; LENGTH: 140 MM; MATERIAL: WHITE METAL; FD FAN MOTOR NDE; DRAWING NO: BP4273/160-6; PART NO: 86- 686	<b>34808</b>		<b>15</b>
9.	Draught Plant	BEARING, SLEEVE: INSIDE DIAMETER: 200 MM; OUTSIDE DIAMETER: 315 MM; LENGTH: 175 MM; MATERIAL: WHITE METAL; FD FAN MOTOR DE; DRAWING NO: BP4390-6; PART NO: 86-685	<b>34807</b>		<b>15</b>
10.	Boiler Feed Pumps	Journal Bearing HSS (set) =2 bearings - Renk Gearbox  BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 70 MM; OUTSIDE DIAMETER: 110	<b>34811</b>		<b>10</b>

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		MM; MATERIAL: STL; HIGH SPEED SIDE SET FOR USE ON RENK STEP DOWN; TYPE GEARBOX; WIDTH 70MM; MODEL NO: TA25X;			
11.	Boiler Feed Pumps	Journal Bearing LSS (set) = 2 bearings – Renk Gearbox  BEARING, SLEEVE: TYPE: LSS(SET); INSIDE DIAMETER: 95 MM; OUTSIDE DIAMETER: 140 MM; MATERIAL: WHITE METAL; FOR USE ON RENK STEP-DOWN GEARBOX; STYLE: JOURNAL; TYPE:: WIDTH: 65MM; MODEL NO: TA25X;	<b>34812</b>		<b>10</b>
12.	Boiler Feed Pumps	Thrust bearing (set) = 2 bearings – Renk Gearbox  BEARING, THRUST: INSIDE DIAMETER: 55 MM; OUTSIDE DIAMETER: 111 MM; WIDTH: 36 MM; MATERIAL: STL; FOR USE ON RENK STEP DOWN GEARBOX; STYLE PAD SET; MODEL NO: TA25X	<b>31584</b>		<b>15</b>
13.	Boiler Feed Pumps (Four Lobe Bearing)	Journal bearing complete DE (EZVR18) – BFP Motor(Four Lobe Bearing)  BEARING, SLEEVE: TYPE: SHELL DE; INSIDE DIAMETER: 181 MM; OUTSIDE DIAMETER: 320 MM; LENGTH: 185 MM; MATERIAL: STL BABBITTED; FOR USE ON ELECTRIC FEED PUMP MOTOR; PART NO: EZVR18-180	<b>34764</b>		<b>20</b>
14.	Boiler Feed Pumps (Four Lobe Bearing)	Journal bearing complete NDE (EZVR18) – BFP Motor(Four Lobe Bearing)  BEARING, SLEEVE: TYPE: SHELL NDE; INSIDE DIAMETER: 181 MM;	<b>34813</b>		<b>20</b>

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		OUTSIDE DIAMETER: 320 MM; LENGTH: 185 MM; MATERIAL: STL BABBITTED; FOR USE ON ELECTRIC FEED PUMP MOTOR; PART NO: EZVR18			
15.	Boiler Feed Pumps (Four Lobe Bearing)	Journal bearing complete EXITOR (EZVQ11-110) – BFP Motor(Four Lobe Bearing)  BEARING, SLEEVE: MATERIAL: STL; FOR USE ON ELECTRIC FEED PUMP MOTOR EXITOR END; PART NO: EZVQ11-110; ID: 110mm	<b>34765</b>		<b>15</b>
16.	Boiler Feed Pump	BEARING, THRUST: MATERIAL: WHITE METAL; STYLE: PAD; FOR USE ON SULZER FEED PUMP; ARTICLE NO: 104-187-177-500; MODEL NO: HPTPK300-350;  WD 75MM X LG 63 MM x THK x 20MM	<b>250970</b>		<b>50</b>
17.	Main Cooling Water NDE	250 Bore Frame, Size 28 HSR Bearing. ID = 250mm+/- 0.05.  BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 250 MM; OUTSIDE DIAMETER: 540 MM; LENGTH: 260 MM; MATERIAL: STL	<b>177116</b>		<b>54</b>
18.	Main Cooling Water DE	200 Bore Frame, Size 22 HSR Bearing. ID = 200mm+/- 0.04  BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 240 MM; OUTSIDE DIAMETER: 380 MM; LENGTH: 220 MM; MATERIAL: STL; REFERENCE NO: 311.01, UNK; HSRE 22/200/200/200/SAS, UNK; SET	<b>177115</b>		<b>54</b>

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		CW PUMP MAIN DRIVE END BEARING * COMPLETE WITH HOUSING.			
19.	Main Cooling Water	Thrust Pads; ID 249.98 + 0.02mm	<b>33145</b>		<b>216</b>
20.	Other	BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 140 MM; OUTSIDE DIAMETER: 200 MM; LENGTH: 255 MM; MATERIAL: BRZ BABBITTED; PART NO: SAVB3175.1	<b>177160</b>		<b>8</b>
21.	CEP radial pads	Thrust pad lower bearing(DE)  PAD, BEARING: TYPE: LOWER; DIMENSIONS: THK 22 MM; MATERIAL: STL GR 43A BS 4360; SLIDING; THRUST; WHITE METAL FACED, B.S.3332/2; TURBINE MAIN CONDENSATE EXTRACTION PUMP; ITM.NO: 26.06.31; PART NO: 37-7,	<b>45053</b>		<b>216</b>
22.	CEP surge pads	Thrust pad upper Bearing(NDE)  UPPER THRUST PADS * 12MM THICK * SLIDING TYPE BEARING PAD * MATERIAL: STEEL B.S.4360 GR 43A * WHITE METAL FACED * B.S.3332/2 * TURBINE MAIN CONDENSOR EXTRACTION PUMP * PART NO: 38.73/38.75 * ITM NO:26.06.31 *	<b>45054</b>		<b>216</b>
23.	CEP Thrust Pad	Bearing pad Journal  PAD, BEARING: DIMENSIONS: WD 120 X LG 68 MM; MATERIAL: WHITE METAL GM4; FACED BS3332/2; SLIDING; ITEM NO: 26.06.31; 1 EA COMPRISING 8 BEARING PADS; PART NO: 38-1	<b>33213</b>		<b>216</b>
24.	CEP NDE	BEARING, PILLOW BLOCK: INSIDE DIAMETER: 294 MM; BLOCK SIZE: WD 470 X LG 925 X	<b>177165</b>		<b>54</b>

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		HT 780 MM; SHAFT HEIGHT: 455 MM; HOUSING MATERIAL:			
25.	CEP Motor DE	BEARING, SLEEVE: TYPE: JOURNAL; INSIDE DIAMETER: 210 MM; OUTSIDE DIAMETER: 254 MM; LENGTH: 130 MM; MATERIAL: WHITE METAL; SUPPL P/N: BP3997	177159		<b>54</b>
26.	CEP Motor NDE	BEARING, SLEEVE: TYPE: BUSH; INSIDE DIAMETER: 150 MM; OUTSIDE DIAMETER: 194 MM; LENGTH: 85 MM; MATERIAL: STL BABBITTED; SUPPL P/N: BP3996; GLACIER, NON DRIVE END, WHITE METAL, FOR TURBINE ON EXTRACTION PUMP	33201		<b>54</b>
27.	CEP DE	SLEEVE, SHAFT: TYPE: PUMP; INSIDE DIAMETER: 130 MM; OUTSIDE DIAMETER: 160 MM; LENGTH: 205 MM; MATERIAL: STL; GRADE: 1.4034.02/CR2 03; SUPPL P/N: 52-2; TURBINE MAIN CONDENSATE EXTRACTION, TYPE HOVC400X4DE-KOND, ITEM NO 26.06.31	0045051		<b>54</b>

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## **4. QUALITY MANAGEMENT**

### **4.1 NON CONFORMANCES AND DEFECTS**

Where NCR's and Defect notifications are issued, the *Contractor* acknowledges receipt as per reply period and proposes corrective and preventive actions to the *Purchaser* per the contract response period. The corrective and preventive actions will include the implementation and completion dates. Progress on all NCR's and Defect notifications issued to the *Supplier* must be reported to the *Purchaser* on weekly basis

- a) The *Suppliers*'s quality manager keeps a register of all NCR's and Defect notifications issued
- b) Deviations from the Contract are treated as a non-conformance.
- c) Records of NCRs and Defect notifications are kept and form part of the data book records.
- d) To ensure reduction of non-conformances, the *Purchaser* will implement a penalty to the value of 5% of the delayed portion of the Task Order per week, up to a limit of 15% of the total value of the Task Order.
- e) During the contract execution phase, the *Supplier* will be monitored by the *Purchaser* for performance on quality related aspects. The monitoring will be in the form of audits and assessments.

### **4.2 TENDER RETURNABLES QUALITY REQUIREMENT**

- The *Contractor* shall submit the latest copy of an internal management system audit reports. The audit reports must include, if applicable, nonconformity identified, and the resulting remedial actions (correction and/ or corrective action reports).
- The *Contractor* shall submit a **draft contract quality plan** that is specific to the scope of work as described in the tender documents.
- The *Contractor* shall submit an example of **inspection and test plan (ITP) or quality control plan (QCP)** on similar or previous work done.
- The *Contractor* shall submit documented information for Control of Externally Provided Processes, Products and Services.
- The *Contractor* shall submit a copy of documented information for roles, responsibilities and authorities.
- The *Contractor* is responsible is to possess an inspection check-sheet with at least the minimum criteria on Annexure 1.
- The *Contractor* shall avail themselves for site clarification meeting and plantwalk if required during the tender process.
- The *Contractor* shall request for more information from the System Engineers if required and/or avail themselves for plantwalk to collect/measure the bearing dimensions where drawings are not available
- The *Contractor* shall avail themselves to measure shaft journal sizes where there are non-standard installations in the plant.

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## 5. ACCEPTANCE

This document has been seen and accepted by:

Name	Designation
T Rasivhetshele	Boiler Engineering Manager
K Moodley	Turbine Engineering Manager

## 6. REVISIONS

Date	Rev.	Compiler	Remarks
March 2023	02	T. Tshikovhi	Review of estimated refurbishment quantities
July 2021	01	T. Tshikovhi	First Issue

## 7. DEVELOPMENT TEAM

The following people were involved in the development of this document:

- Jesse Eganza
- Sibusiso Yotho
- Hoosein Kotwal
- Herman vd Westhuizen
- Johan Vos
- Thengi Molotsi

## 8. ACKNOWLEDGEMENTS

- N/A



### 1.3 Interpretation and terminology

The following abbreviations are used in this Service Information:

Abbreviation	Meaning given to the abbreviation
QCP	Quality Control Procedure

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## **2 Management strategy and start up.**

---

### **2.1 The Contractor's plan for the service**

In the TSC3 the *Contractor's* plan is his "design" for performing the *service* throughout the *service period*. Section 2 of the *conditions of contract* describes what the *Contractor* is to show in his plan both in the core clauses and some additional requirements in each of the main Options.

The extent of the *Contractor's* plan will depend on whether the *Contractor* is required to develop a plan in accordance with the *Employer's* broad outline of the *service* or whether the *Employer* has provided a plan for the *Contractor* to follow. Read the TSC3 Guidance Notes pages 21 and 22 for more information on the *Contractor's* plan.

The service provider will be expected to collect the damaged component from site within 48 Hours after notification. Once the component is at the supplier's workshop the component must be striped within 5 Days,

The Employer (Engineer or Technician) must witness the scoping and approve the final scope.

The final scope must be given to the Employer (RF controller) to issue a purchase order for repairs. The Service provider will issue a project plan to the Employers Representative, the project plan should include the following:

- Repair start date
- Quality Inspection dates to be done by the employer rep at the supplier premises
- Final quality inspection date
- Expected delivery date

Note: if the Bearing is uneconomical or beyond to repair, the Employer's rep will decide on a replacement, the damaged bearing must be returned to Kendal.

The following technical reporting and scheduling requirements which shall be incorporated into the *Contractor's* plan.

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## **2.2 Management meetings**

Regular meetings of a general nature may be convened and chaired by the *Service Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Kick off meeting	1 week before the commencement of the Contract	Kendal Power Station Material Management offices	<i>RF Engineer, Controller, Technician and Service provider</i>
Quality and NCR/ Defect meeting	Quarterly	Kendal Power Station Material Management offices	<i>RF Engineer, Controller, Technician and Service provider</i>
Assessment and Low Service Damages meetings	Quarterly	Kendal Power Station Material Management offices	<i>RF Engineer, Controller, Technician and Service provider</i>

Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *service*. Records of these meetings shall be submitted to the *Service Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened 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.

## **2.3 Documentation control**

- 1.1.1.1. The *Contractor* submits all documentation to the *Service Manager* and the *Service Manager* to the *Contractor's* Contract Manager.
- 1.1.1.2. Electronic contract communication is restricted to electronic mail only.
- 1.1.1.3. All communications are filed and kept on Site. These communication documents are to adhere to the NEC TSC3 communication requirements.
- 1.1.1.4. For contractual issues, standard NEC templates and forms are used by both parties or if unavailable, the *Employer's* templates and forms are used e.g. Non Conformance Reports, Pre-commissioning checks or Assessment Certificates. Alternatively, the *Contractor* prepares appropriate documentation to meet the *Employer's* requirements.
- 1.1.1.5. The supplier will be notified via an email to come and collect bearing bearing
- 1.1.1.6. The contractor will be notified via an order number to start any repairs
- 1.1.1.7. The service provider will deliver the material to the warehouse together with a delivery note and QCP document. The QCP document to be emailed to the engineer and quality control technician for every bearing.

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## **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.

1.1.2. The Contractor delivers the item to the warehouse with a delivery note and QCP document, final quality check will be done on site

1.1.3. Good receipt and service entry will done to effect payment

1.1.4. The contract to issue an invoice, the price should be the same as on the Purchase order and the invoice should be submitted to finance for payment.

1.1.5. The invoices can be submitted using emails to [invoiceseskomlocal@eskom.co.za](mailto:invoiceseskomlocal@eskom.co.za)

1.1.6. To facilitate payment, the *Contractor* must ensure the following:

1.1.6.1. Ensure that the Eskom order number is clearly indicated on your invoice together with the line number on the order you are billing for.

1.1.6.2. All Electronic invoices must be sent in PDF format only.

1.1.6.3. Each PDF file contains one invoice; or one debit note; or one credit note only as Eskom's SAP System does not support more than one PDF being linked into the workflow at a time.

1.1.6.4. Your E-mail may contain more than one PDF file (e.g. 2 invoices on 2 separate PDF files in one e-mail)

1.1.6.5. A PDF file that was created directly from a system meets the definition of the original document and is allowed (including saving documents from Excel to PDF, Word to PDF etc.)

1.1.6.6. An Invoice that was printed and then scanned to PDF by the Vendor is not acceptable as this is not an original tax invoice by SARS definition but a copy.

1.1.6.7. The following wording needs to appear on the invoice: "Your invoice is encrypted in order to comply with SARS requirements that invoices and statements sent electronically are tamperproof."

1.1.6.8. If there is Cost Price Adjustment (CPA) on your invoice, it is recommended that the *Contractor* issue a separate invoice for CPA so that if there are any issues on the CPA the rest of the invoice can be paid while resolving the CPA issues.

1.1.6.9. You do not require a goods receipt (GR) number to submit your invoices. When the GR number is received, Word can then send the GR number to the FSS contact centre at [FSS@eskom.co.za](mailto:FSS@eskom.co.za) or 011 800 5060.

1.1.6.10. All queries and follow-ups on invoice payments are made by contacting the FSS Contact Centre: Tel: 011 800 5060.

1.1.7. Payment is made within 30 days after receipt of an acceptable invoice at the address stated in the order and the acceptance of the goods by Eskom. Payments are made on Friday's only.

1.1.8. If CPA is applicable, the *Project Manager* and the *Contractor* must confirm the increase/decrease with the QS department BEFORE the revised prices are stated on the Invoice. The QS and

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*Project Manager* must confirm the escalation with the Financial Department before it may be implemented.

The *Contractor* shall address the tax invoice to

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;
- (add other as required)

Add procedures for invoice submission and payment (e. g. electronic payment instructions)

## **2.5 Contract change management**

1. Any item that affects the prices or has the potential to do so, is immediately communicated to the *Service Manager* via an early warning and/or followed by a claim for compensation event with a quotation.
2. After consideration, approval may be given by the *Service Manager* and the *Contractor* may implement the compensation event accordingly. All claims will not necessarily be approved as a compensation event nor do quotes have to be accepted unchanged since the *Service Manager* performs an evaluation and approves justifiable costs only.

## **3 Health and safety, the environment and quality assurance**

### **3.1 Health and safety risk management**

In addition to the requirements of the laws governing health and safety, Eskom may have some additional requirements particular to the *service* and the Affected Property for this contract. The text below provides for these being attached as an Annexure to this Service Information. PLEASE ALSO READ CORE CLAUSE 27.4 TOGETHER WITH Z7 IN THE ADDITIONAL CONDITIONS OF CONTRACT TO MAKE SURE THAT WHATEVER IS INCLUDED IN THE ANNEXURE FOLLOWS ON FROM THOSE CLAUSES.

The Divisional/Regional Safety Risk Manager or his representative having jurisdiction over the *service* must provide the relevant safety, health and environmental (SHE) criteria for incorporation into this Service Information. The SHE specification / scope must be signed off by the Divisional/Regional Safety Risk Manager or his representative confirming that the applicable safety criteria have been taken into account.

The Commodity Manager / Buyer must refer the tender to the Divisional/Regional Safety Risk Manager or his representative in order to evaluate against enquiry-specific safety criteria.

The Divisional Safety Risk Managers who will be responsible for the allocation of resources to assist P&SCM with the above processes are as follows:

- Generation: Roley McIntyre
- Transmission: Tony Patterson

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- Distribution: Alex Stramrood
- Enterprises: Jace Naidoo
- Corporate: Kerseri Pather

The *Contractor* shall comply with the health and safety requirements contained in Annexure \_\_\_\_\_ to this Service Information.

### **3.2 Environmental constraints and management**

The *Contractor* shall comply with the environmental criteria and constraints stated in Annexure \_\_\_\_\_

### **3.3 Quality assurance requirements**

#### **General**

- a. The *Contractor* complies with the *Employer's* quality and technical requirements including those listed in the *Employer's* specification document QM58 ( [Quality Management Specification 240- 105658000](#)).
- b. The *Contractor* submits a QMS as a returnable schedule and uses it for all phases of the Project. The QMS complies with the requirements of ISO 9001 standard. The *Contractor* provides evidence of a fully implemented QMS as and when requested by the *Employer*. The *Employer* may at his sole discretion carry out an audit on the Contractor, the *Contractor's* suppliers and Subcontractors.

#### **Quality Management documents requirements**

The *Contractor* submits the following document [after contract award](#) to the *Employer* for review and acceptance and prior to the commencement of work

The *Contractor* will supply the *Employer* with a QCP which will detail the *Contractor's* organisation, quality assurance and quality control procedures specific to this project. The QCP must be aligned to, and reference ISO 10005:2005 QMS, guidelines for quality plans and in compliance with the guideline in QM 58( [Quality Management Specification 240- 105658000](#)). The QCP will make reference to the *Contractor's* QMS Procedures to be used in this Contract:

- a. The *Contractor's* QMS compliance with the requirements of ISO 9001
- b. *Contractor's* quality manual
- c. *Contractor's* quality procedures
- d. *Contractor's* quality forms and work instructions
- e. *Contractor's* quality system documents referenced in this Works Information

The *Contractor* supplies the *Employer* with a QCP or ITP for review and acceptance.

The *Contractor* provides CVs of the quality management employees who will be responsible for quality on site.

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Quality Management employee's responsibilities include but are not limited to the following:

- a. Administration of QA/QC [functions](#)
- b. Verification of approval status of [their or](#) Subcontractor's QCP and procedures
- c. On-and -offsite inspections
- d. Co-ordination, inspection and verification of the Employer's intervention points
- e. Review of Contractor testing and inspection documents (procedures, test results)

The *Contractor* submits as a minimum the following documents, as required by the *Employer*, which requirement does not constitute a compensation event, during the execution of the Works:-

- a. Updated QCP register
- b. Inspection notifications accompanied by their inspection report
- c. Non-conformance and Defects registers and reports
- d. Updated Site and off site inspection schedules.
- e. Inspections completed/outstanding.
- f. Inspection and test reports

### **Quality Responsibility**

- a. The *Contractor* is accountable for the quality of the output and liable for any failures.
- b. The *Contractor* is responsible for defining the level of intervention of QA/QC or inspections. These are in line with the Employers requirements.
- c. The interventions points include all witness, hold, verification and review points required by the Employer. The *Contractor's* failure to allow the intervention points will constitute a non-conformance.

#### **3.3.1 Reliability and Availability**

The service provider should ensure availability of spares for refurbishment.

Each bearing must come with warranty after installation.

### **Inspections**

- a. The *Contractor* is responsible for the inspection of all the Works that is performed and the Employer only verifies that the Works is conducted as per the Contract.
- b. The *Contractor* conducts all inspections in accordance with the accepted QCP / ITP.
- c. The *Contractor* drafts a QCP or ITP which shows each activity and submits to the Employer for acceptance.
- d. The *Contractor* provides suitably qualified personnel to conduct on-and-offsite inspections

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- e. The *Contractor* ensures that all Works are inspected and approved before the Employer is invited for verification.

### **Non Conformances and Defects**

Where NCR's and Defect notifications are issued, the *Contractor* acknowledges receipt as per reply period and proposes corrective and preventive actions to the *Employer* as per the contract response period. The corrective and preventive actions will include the implementation and completion dates. Progress on all NCR's and Defect notifications issued to the *Contractor* must be reported to the *Employer* on weekly basis.

- a. The *Contractor's* keeps a register of all NCR's and Defect notifications issued
- b. Deviations from the Contract are treated as a non-conformance.
- c. Records of NCRs and Defect notifications are kept and form part of the data book records.

During the contract execution phase, the *Contractor* will be monitored by the *Employer* for performance on quality related aspects. The monitoring will be in the form of audits and assessments.

### **Quality Reporting**

The *Contractor* submits a monthly quality report, on the last working day of the month. The report includes but not limited to the following:

- a) A register of NCRs and defects
- b) Updated QCP / ITP register
- c) Planned and completed local and foreign inspection dates
- d) Completed and outstanding Inspections

## **4 Procurement**

There is a cross reference from the core clause 11.2(6) definition of Disallowed Cost to the Service Information regarding procurement procedures. This part of the Service Information MUST include any such procedures to be able to administer Disallowed Cost.

### **4.1 People**

#### **4.1.1 Minimum requirements of people employed**

Specify any constraints relating to people employed to Provide the Service; for example permits for foreigners, training (other than H & S), use of labour from designated areas and industrial relations.

#### **4.1.2 BBBEE and preferencing scheme**

Specify constraints which *Contractor* must comply with after contract award in regard to any Broad Based Black Economic Empowerment (B-BBEE) or preferencing scheme measures.

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#### **4.1.3 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

[Insert the agreed ASGI-SA Compliance Schedule here]

The Contractor shall keep accurate records and provide the Service Manager 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.

## **4.2 Subcontracting**

### **4.2.1 Preferred subcontractors**

TSC3 does not make use of nominated subcontracting, but the Employer may list which subcontractors or suppliers the Contractor is required to enter into subcontracts with. This is usually only required where specialist services need to be obtained from a particular supplier or group of suppliers in order to comply with operational standards.

### **4.2.2 Subcontract documentation, and assessment of subcontract tenders**

Specify any constraints on how the Contractor is to prepare subcontract documentation, whether use of the NEC system is compulsory or not (compulsory is recommended) and how subcontract tenders are to be issued, received, assessed (using a joint report?) and awarded.

### **4.2.3 Limitations on subcontracting**

**The Employer may require that the Contractor must subcontract certain specialised work, or that the Contractor shall not subcontract more than a specified proportion of the whole of the contract. Check with Xfunctional team!!!**

#### **4.2.3 Limitations on Subcontracting**

4.2.3.1 The Contractor is not allowed to subcontract more than 25% of the contract value to another enterprise or supplier. In addition, the intended Subcontractor/s must have equal or better B-BBEE status, unless the intended Subcontractor is an EME that has the capability and ability to execute the sub-contract, in order to claim the points for B-BBEE.

4.2.3.2 The terms and conditions of employment of Contractors and Subcontractors must be made available to the Project Manager before any work may commence.

4.2.3.3 The Contractor and Subcontractors comply fully with all local and statutory labour laws (LRA, BCEA, UIF etc.) and agreements and promptly attend to any labour grievances that may arise. The

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*Contractor* and Subcontractors do not remunerate employees at less than the proclaimed statutory wage (Minimum Wage Act).

4.2.3.4 The contract does not create any renewal expectations on either party as referred to in section 186 "B" of the Labour Relations Act

#### **4.2.4 Attendance on subcontractors**

Refer to Safety File

### **4.3 Plant and Materials**

#### **4.3.1 Specifications**

Refer to scope of work

#### **4.3.2 Correction of defects**

State any constraints when dealing with defective Plant and Materials such as how repairs are carried out - can the item be fixed up or must it be replaced by a new one. . Discuss with Xfunctional team if any!!!

#### **4.3.3 Contractor's procurement of Plant and Materials**

Specify any constraints on how the *Contractor* is to order, codify, expedite, freight, import, transport to the Affected Property and any other requirements for delivery and storage before installation. The *Employer* may require warranties from suppliers to be in favour of the *Employer* and not just to the *Contractor*. The *Employer* may also need schedules of vendor data for his own use after the end of the *service period*. . Discuss with Xfunctional team if any!!!

#### **4.3.4 Tests and inspections before delivery**

Refer to Scope of work.

## **5 Working on the Affected Property**

Contractors not allowed to move around the power station with any authorised person to accompany.

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

All contractors on site need to attend induction before being granted permit for entry. No one will be allowed to enter the Power Station without permit. All security majors will be taken and enforced to anyone who is found in position with out permit. All contractors' employees are to adhere to the safety wear (PPE) as stated on the SHE file.

### **5.2 People restrictions, hours of work, conduct and records**

Contractor will be allowed on site as an when goods or service is required.

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### **5.3 Health and safety facilities on the Affected Property**

Section 3 deals with contractual H & S requirements in addition to those of the OHSA Act. This section allows the *Employer* to state what measures are to be taken on the Affected Property by describing where First Aid facilities provided by the *Employer* are located and any other emergency arrangements. Do not use if already addressed in 2.3.

### **5.4 Environmental controls, fauna & flora**

Contractor's are not allowed to collect or carry flowers, fauna and flora or an animal on site.

### **5.5 Cooperating with and obtaining acceptance of Others**

N/A

### **5.6 Records of *Contractor's* Equipment**

N/A

### **5.7 Equipment provided by the *Employer***

Equipment that will be provided by an employer is Forklift and Ridge Truck for Offloading and Loading of material.

### **5.8 Site services and facilities**

#### **5.8.1 Provided by the Employer**

This is a mandatory cross reference form clause 25.2 in TSC3. Employer will provide in the way of power, water, toilet on the affected on site.

#### **5.8.2 Provided by the Contractor**

Describe what the *Contractor* is to provide in the way of accommodation, laboratories, storage, vehicles and office equipment for the *Service Manager* and any restrictions or minimum requirements concerning the *Contractor's* own facilities. Also state what happens to these facilities upon completion of the contract.

### **5.9 Control of noise, dust, water and waste**

N/A

### **5.10 Hook ups to existing works**

N/A

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## **5.11 Tests and inspections**

### **5.11.1 Description of tests and inspections**

Goods will be tested and inspected before delivery to Kendal Power Station by the Contractor with the presence of an Eskom Engineer and Service Manager.

### **5.11.2 Materials facilities and samples for tests and inspections**

State what materials facilities and samples for tests and inspections the *Contractor* and the *Employer* are to provide, per core clause 40.2.

## **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

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