

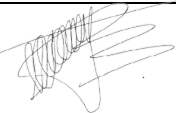






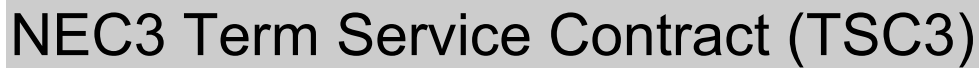
ESKOM HOLDINGS SOC Ltd

CONTRACT NUMBER \_\_\_\_\_

Title :

	<b>Procurement SOW</b>	<b>Generation</b>
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Title:	Level 4 Refurbishment of high speed BFP Electrical Motors	Revision:	0
		Total Pages:	0 (SOW of NEC document)
		Disclosure Classification:	CONTROLLED DISCLOSURE
Compiled by Engineering		Supported by Line Manger	Authorized by Quality
Signature 		Signature 	Signature pp 
Siyabonga Manana System Engineer		Ben Mbuyane Electrical Maintenance Manager	Rejoyce Ramphadi Manager Quality
Date: 29/10/2025		Date: 02.10.2025	Date: 2025 October 05
Accepted by Safety		Accepted by Environmental	Accepted by Procurement
Signature 		Signature 	Signature 
Rethabile Tshabalala Safety Officer		Thando Zungu Senior Advisor Environment	Philani Mollo Senior Advisor Procurement
Date: 2025/11/04		Date: 2025/11/04	Date: 18/11/2025



## LEVEL 4 REFURBISHMENT OF HIGH SPEED BFP ELECTRICAL MOTORS

<b>Part C1</b>	<b>Agreements &amp; Contract Data</b>
<b>Part C2</b>	<b>Pricing Data</b>
<b>Part C3</b>	<b>Scope of Work</b>

**ENQUIRY No.**

**PART C1:        AGREEMENTS & CONTRACT DATA**

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**Contents:**

<b>C1.1</b>	<b>Form of Offer and Acceptance</b>
<b>C1.2a</b>	<b>Contract Data provided by the <i>Employer</i></b>
<b>C1.2b</b>	<b>Contract Data provided by the <i>Contractor</i></b>

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## C1.2 TSC3 Contract Data

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

Clause	Statement	Data
1	<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 Damage</b>
		<b>X18: Limitation of liability</b>
		<b>X19: Task Order</b>
		<b>Z: Additional conditions of contract</b>
	of the NEC3 Term Service Contract (June 2005) <sup>1</sup>	
10.1	The <i>Employer</i> is (name):	<b>Eskom Holdings SOC Limited (Reg No: 2002/015527/06), a juristic person 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.	
	Fax No.	
10.1	The <i>Service Manager</i> is (name):	<b>K.B Mbuyane</b>
	Address	<b>Majuba Power Station Private Bag x 9001 Volksrust 2470</b>
	Tel	<b>017 799 3110</b>
	Fax	<b>086 662 6773</b>
	e-mail	<b>MbuyanKB@eskom.co.za</b>

<sup>1</sup> Available from Engineering Contract Strategies Tel 011 803 3008 Fax 011 803 3009

11.2(2)	The Affected Property is	<b>Majuba Power Station</b>
11.2(13)	The <i>service</i> is	<b>LEVEL 4 REFURBISHMENT OF HIGH SPEED BFP ELECTRICAL MOTORS</b>
11.2(14)	The following matters will be included in the Risk Register	<b>N/A</b>
11.2(15)	The Service Information is in	<b>Part 3: Scope of Work and all documents and drawings to which it makes reference.</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>1 Day</b>
<b>2</b>	<b>The Contractor's main responsibilities</b>	(If the optional statement for this section is not used, no data will be required for this section)
21.1	The <i>Contractor</i> submits a first plan for acceptance within	<b>N/A</b>
<b>3</b>	<b>Time</b>	
30.1	The <i>starting date</i> is.	<b>01 November 2025</b>
30.1	The <i>service period</i> is	<b>60 Months</b>
<b>4</b>	<b>Testing and defects</b>	
<b>5</b>	<b>Payment</b>	
50.1	The <i>assessment interval</i> is	<b>After every successive refurbishment of the Motor.</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>Four weeks.</b>
51.4	The <i>interest rate</i> is	<p>(i) zero percent above 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 (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 and</p> <p>(ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted <i>mutatis mutandis</i> every 6 months thereafter (and</p>

as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove.

	These are additional compensation events:	1 N/A
7	<b>Use of Equipment Plant and Materials</b>	
8	<b>Risks and insurance</b>	
80.1	These are additional <i>Employer's</i> risks	1. N/A
83.1	The <i>Employer</i> provides these insurances from the Insurance Table	as stated for "Format TSC3" available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a> (See Annexure A for basic guidance).
83.1	The <i>Employer</i> provides these additional insurances	as stated for "Format TSC3" available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a> (See Annexure A for basic guidance)
83.1	The minimum amount of cover for insurance against loss and damage caused by the <i>Contractor</i> to the <i>Employer's</i> property is	the amount of the deductibles relevant to the event described in the "Format TSC3" insurance policy available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a>
83.1	The minimum amount of cover for loss of or damage to Plant and Materials provided by the <i>Employer</i> is:	the amount of the deductibles relevant to the event described in the "Format TSC3" insurance policy available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a>
83.1	The minimum amount of cover for insurance in respect of 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 for any one event is:	whatever the <i>Contractor</i> deems necessary in addition to that provided by the <i>Employer</i> .
83.1	The minimum limit of indemnity for insurance in respect of 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 for any one event is:	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Contractor's</i> common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands)..
9	<b>Termination</b>	There is no Contract Data required for this section of the <i>conditions of contract</i> .

10	Data for main Option clause				
A	Priced contract with price list				
20.5	The Contractor prepares forecasts of the final total of the Prices for the whole of the service at intervals no longer than		Four weeks.		
11	Data for Option W1				
W1.2(3)	The Adjudicator nominating body is:		the Chairman of the Joint Civils Division of the South African Institution of Civil Engineering. (See <a href="http://www.jointcivils.co.za">www.jointcivils.co.za</a> )		
W1.4(2)	The tribunal is:		Arbitration		
W1.4(5)	The arbitration procedure is		the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.		
	The place where arbitration is to be held is		As mutually agreed within the boundaries of South Africa		
	The person or organisation who will choose an arbitrator		the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.		
	- if the Parties cannot agree a choice or				
	- if the arbitration procedure does not state who selects an arbitrator, is				
12	Data for secondary Option clauses				
X1	Price adjustment for inflation		On each anniversary of the contract date contract 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 the contract Manager must confirm the escalation with the financial department before it may be implemented. The CPA adjustment calculated will be the 12 months and will be adjusted on the contract anniversary date. The first 12 months the rates are without escalation.		
X1.1	The base date for indices is		1 month before contract start date		
	The proportions used to calculate the Price Adjustment Factor are:		proportion	linked to index for	Index prepared by
			0.10	Transport	L2 Road Freight Cost
			0.65	Labour	C3 Actual Labour Cost All hourly Paid Employees
			0.1	Copper	F Metal Prices Copper RCP   Metric Ton
			0.15	non-adjustable	
			1.00	Total	

<b>X2</b>	<b>Changes in the law</b>	<b>No data is required for this Option</b>
<b>X3</b>	<b>Multiple currencies</b>	<b>N/A</b>
<b>X4</b>	<b>Parent company guarantee</b>	<b>No data is required for this Option</b>
<b>X12</b>	<b>Partnering<sup>2</sup></b>	<b>N/A</b>
<b>X13</b>	<b>Performance bond</b>	<b>N/A</b>
X13.1	The amount of the performance bond is	
<b>X17</b>	<b>Low service damages</b>	
X17.1	The <i>service level table</i> is in	<b>C3:Scope of work</b>
<b>X18</b>	<b>Limitation of liability</b>	
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to	<b>R0.0 (zero Rand)</b>
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to	<b>the amount of the deductibles relevant to the event described in the "Format TSC3" insurance policy available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a></b>
X18.3	The <i>Contractor's</i> liability for Defects due to his design of an item of Equipment is limited to	<b>The greater of</b> <ul style="list-style-type: none"> <li>the total of the Prices at the Contract Date and</li> <li>the amounts excluded and unrecoverable from the <i>Employer's</i> insurance (other than the resulting physical damage to the <i>Employer's</i> property which is not excluded) plus the applicable deductibles in the <i>Employer's</i> assets and works / maintenance policies available on <a href="http://www.eskom.co.za/live/content.php?Item_ID=9248">http://www.eskom.co.za/live/content.php?Item_ID=9248</a></li> </ul>
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> , for all matters arising under or in connection with this contract, other than the excluded matters, is limited to	<b>the total of the Prices other than for the additional excluded matters.</b>  <b>The <i>Contractor's</i> total liability for the additional excluded matters is not limited.</b>  <b>The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for</b> <ul style="list-style-type: none"> <li>Defects due to his design, plan and specification,</li> </ul>

<sup>2</sup> See **Bennett, J and Baird, A** *NEC and Partnering - The Guide to Building Winning Teams* Thomas Telford London 2001 available from Engineering Contract Strategies



		<ul style="list-style-type: none"> <li>Defects due to manufacture and fabrication outside the Affected Property,</li> <li>loss of or damage to property (other than the <i>Employer's</i> property, Plant and Materials),</li> <li>death of or injury to a person and</li> <li>infringement of an intellectual property right.</li> </ul>
X18.5	The <i>end of liability date</i> is	One months after the end of the <i>service period</i> .
<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	No programme is to be submitted
<b>X20</b>	<b>Key Performance Indicators (not used when Option X12 applies)</b>	N/A
<b>Z</b>	<b>The <i>additional conditions of contract</i> are</b>	<b>Z1 to Z11 always apply.</b>
<b>Z1</b>	<b>Cession delegation and assignment</b>	
Z1.1	The <i>Contractor</i> does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the <i>Employer</i> .	
Z1.2	Notwithstanding the above, the <i>Employer</i> may on written notice to the <i>Contractor</i> 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 and the Electricity Distribution Industry.	
<b>Z2</b>	<b>Joint ventures</b>	
Z2.1	If the <i>Contractor</i> 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 <i>Employer</i> for the performance of this contract.	
Z2.2	Unless already notified to the <i>Employer</i> , the persons or organisations notify the <i>Service Manager</i> within two weeks of the Contract Date of the key person who has the authority to bind the <i>Contractor</i> on their behalf.	
Z2.3	The <i>Contractor</i> does not substantially alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the <i>Employer</i> having been given to the <i>Contractor</i> in writing.	
<b>Z3</b>	<b>Change of Broad Based Black Economic Empowerment (B-BBEE) status</b>	
Z3.1	Where a change in the <i>Contractor's</i> legal status, ownership or any other change to his business composition or business dealings results in a change to the <i>Contractor's</i> B-BBEE status, the <i>Contractor</i> notifies the <i>Employer</i> within seven days of the change.	
Z3.2	The <i>Contractor</i> is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the <i>Service Manager</i> within thirty days of the notification or as otherwise instructed by the <i>Service Manager</i> .	
Z3.3	Where, as a result, the <i>Contractor's</i> B-BBEE status has decreased since the Contract Date the <i>Employer</i> may either re-negotiate this contract or alternatively, terminate the <i>Contractor's</i> obligation to Provide the Works.	

- 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 Ethics**

- Z4.1 Any offer, payment, consideration, or benefit of any kind made by the *Contractor*, which constitutes or could be construed either directly or indirectly as an illegal or corrupt practice, as an inducement or reward for the award or in execution of this contract constitutes grounds for terminating the *Contractor's* obligation to Provide the Service or taking any other action as appropriate against the *Contractor* (including civil or criminal action).

- Z4.2 The *Employer* may terminate the *Contractor's* obligation to Provide the Service if the *Contractor* (or any member of the *Contractor* where the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations) is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices.

Such practices include making of offers, payments, considerations, or benefits of any kind or otherwise, whether in connection with any procurement process or contract with the *Employer* or other people or organisations and including in circumstances where the *Contractor* or any such member is removed from the an approved vendor data base of the *Employer* as a consequence of such practice.

- Z4.3 Notwithstanding the provisions of core clause 90.2, the procedures on termination in terms of this clause are P1, P2 and P4 as stated in the core clause 92 and the amount due is A1 and A3 as stated in core clause 93.

## **Z5 Confidentiality**

- Z5.1 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.

- Z5.2 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*.

- Z5.3 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.

- Z5.4 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*.

- Z5.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

## **Z6 Waiver and estoppel: Add to core clause 12.3:**

Z6.1 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.

**Z7 Health, safety and the environment: Add to core clause 27.4**

Z7.1 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 2003 (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.

Z7.2 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.

**Z8 Provision of a Tax Invoice and interest. Add to core clause 51**

Z8.1 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.

Z8.2 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.

Z8.3 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.

**Z9 Notifying compensation events**

Z9.1 Delete from the last sentence in core clause 61.3, "unless the *Service Manager* should have notified the event to the *Contractor* but did not".

**Z10 Employer's limitation of liability**

Z10.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)

Z10.2 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 under the compensation events stated in this contract.

**Z11 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":**

Z11.1 or had a judicial management order granted against it.

## **Annexure A: Insurance provided by the Employer**

*These notes are provided as guidance to tendering contractors and the Contractor about the insurance provided by the Employer. Details of the insurance itself are available from the internet web link given below.*

1. Services provided in a TSC3 contract could include some element of construction or refurbishment as well as a continuous maintenance or operational service activity. If an event occurs which causes loss or damage, a claim could be made either against the *Employer's* "works" type policy which may be in place for the *Employer's* portion of the Affected Property concerned or against the *Employer's* assets policy which may be in place for the *Employer's* portion of the Affected Property concerned, or both.
2. The cover provided and the deductibles under the works policy are different to those under the assets policy. Each policy has a range of applicable deductibles depending on the location of the Affected Property and the nature of the insurable event.
3. The *Contractor* is required in terms of Contract Data for clause 83 to provide cover for the deductibles in the insurance provided by the *Employer*. This can be provided from his own resources on a 'self insured' basis or obtained by him from his own insurers. In order to assess the extent of this cover, tendering contractors and their brokers should consult the internet web link given below and scroll to '**Format TSC3**' to establish both the cover and the deductibles in relation to the *service* provided in terms of this contract.
4. Tendering contractors should note that cover provided by the *Employer* is only per the policies available on the internet web link listed below and may not be the cover required by the tendering contractor or as intended by each of the listed insurances in the left hand column of the Insurance Table in clause 83.2. In terms of clause 83.1 "the *Contractor* provides the insurances stated in the Insurance Table except any insurance which the *Employer* is to provide". Hence the *Contractor* provides insurance which the *Employer* does not provide and in cases where the *Employer* does provide insurance the *Contractor* insures for the difference between what the Insurance Table requires and what the *Employer* provides.
5. If Marine Insurance is required the *Contractor* needs to obtain a copy of the latest edition of Eskom's Marine Policies Procedures found at internet website given below.
6. **Further information and full details of all Eskom provided policies and procedures may be obtained from:**

**[http://www.eskom.co.za/live/content.php?Item\\_ID=9248](http://www.eskom.co.za/live/content.php?Item_ID=9248)**

## **Annexure B: The *Employer's* Panel of Adjudicators**

The following persons listed in alphabetical order of their surname have indicated their willingness to be included in the Eskom Panel of Adjudicators. Their CV's may be obtained by using the contact details provided.

Name	Location	Contact details (phone & e mail)
Nigel ANDREWS	Gauteng	+27 11 836-6760 <a href="mailto:nigela@quoin.net">nigela@quoin.net</a>
Andrew BAIRD	Gauteng	+27 11 803 3008 <a href="mailto:andrewbaird@ecsconsult.co.za">andrewbaird@ecsconsult.co.za</a>
Christopher BINNINGTON	Gauteng	+27 11 888-6141 <a href="mailto:cdb@bca.co.za">cdb@bca.co.za</a>
Peter HIGGINS	UK	+44 1293 873 868 <a href="mailto:peterhiggins@pdconsult.co.uk">peterhiggins@pdconsult.co.uk</a>
Bruce LEECH	Gauteng	+27 11 290 4000 <a href="mailto:leech@counsel.co.za">leech@counsel.co.za</a>
Nigel NILEN	Gauteng	+27 11 465 3601; <a href="mailto:nilences@global.co.za">nilences@global.co.za</a>
Robert St. LEGER	Cape Town	+27 21 794 7488 <a href="mailto:bobst@iafrica.com">bobst@iafrica.com</a>
Peter THURLOW	Gauteng	+27 11 787 6226 <a href="mailto:info@thurlowassoc.com">info@thurlowassoc.com</a>

**Information about the Panel and appointment of the selected *Adjudicator* is available from Eskom Supply Chain Operations management, by contacting Leighton Itholeng (Tel.: +27 (0)11 800 4031) (Fax :+27 (0)86 668 0419) E-mail: [Leighton.Itholeng@eskom.co.za](mailto:Leighton.Itholeng@eskom.co.za)**

## C1.2 Contract Data

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

#### Notes to a tendering contractor:

1. Please read both the both the NEC3 Term Service Contract (June 2005) and the relevant parts of its Guidance Notes (TSC3-GN)<sup>3</sup> in order to understand the implications of this Data which the tenderer is required to complete.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data
3. Where a form field like this [ ] appears, data is required to be inserted relevant to the option selected. Click on the form field **once** and type in the data. Otherwise complete by hand and in ink.

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 persons are:  1 Name:  Job:  Responsibilities:  Qualifications:  Experience:  2 Name:  Job:  Responsibilities:  Qualifications:  Experience:	

<sup>3</sup> Available from Engineering Contract Strategies Tel 011 803 3008 Fax 011 803 3009

CV's (and further key person's data including CVs) are in .

A	Priced contract with price list		
11.2(12)	The <i>price list</i> is in		
11.2(19)	The tendered total of the Prices is	R	

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

Document reference	Title	
C2.1	Pricing assumptions: Option A	
C2.2	The <i>price list</i>	



## C2.1 Pricing assumptions: Option A

### 1. The conditions of contract

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

Clause 11 in NEC3 Term Service Contract, June 2005 (TSC3) core clauses and Option A states:

- Identified and defined terms** 11
- 11.2 (12) The Price List is the *price list* unless later changed in accordance with this contract.
- (17) The Price for Services Provided to Date is the total of
- the Price for each lump sum item in the Price List which the *Contractor* has completed and
  - where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the *Contractor* has completed by the rate.
- (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.

#### 1.2. 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.

#### 1.3. 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).

#### 1.4. Preparing the *price list*

It will be assumed that the tendering contractor has read Pages 14, 15 and 73 of the TSC3 Guidance Notes before preparing the *price list*. Items in the *price list* may have been inserted by the *Employer* and the tendering contractor should insert any additional items which he considers necessary. Whichever party provides the items in the *price list* the total of the Prices is assumed to be fully inclusive of everything necessary to Provide the Service as described at the time of entering into this contract.

1 As the *Contractor* has an obligation to correct Defects (core clause 42.1) and there is no compensation event for this unless the Defect was due to an *Employer's* risk, the lump sum Prices and rates must also include for the correction of Defects.

2 If the *Contractor* has decided not to identify a particular item in the *price list* at the time of tender the cost to the *Contractor* of doing the work must be included in, or spread across, the other Prices and rates in the *price list* in order to fulfil the obligation to complete the *service* for the tendered total of the Prices.

3 There is no adjustment to lump sum prices in the *price list* if the amount, or quantity, of work within that lump sum item of service later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event. See Clause 60.1.

4 Hence the Prices and rates tendered by the *Contractor* in the *price list* 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.

5 The Contractor does not have to allow in his Prices and rates for matters that may arise as a result of a compensation event. It should be noted that the list of compensation events includes those arising as a result of an *Employer's* risk event listed in core clause 80.1.

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

(From page 73 of 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*

## PART 3: SCOPE OF WORK

<b>Document reference</b>	<b>Title</b>	<b>No of pages</b>
C3.1	This cover page <i>Employer's Service Information</i>	1
C3.2	<i>Contractor's Service Information</i>	
	Total number of pages	40

# C3.1: EMPLOYER'S SERVICE INFORMATION

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## Description of the service

### Executive overview

The contract is for duration of five (5) year, starting 01 November 2025 and ending on 31 October 2030 and provides for the overhaul/refurbishment of Twelve (15) BFP motors. The number of motors per year will depend on the availability of motors and coinciding of the Boiler Feed Pump mechanical overhaul.

This Work Instruction provides the Eskom requirements for the onsite (in situ) refurbishment of the 8.8MW Alstom boiler feed pump (BFP) synchronise motor at Majuba Power Station. The *on-site* overhaul works shall include but is not limited to, works to be implemented on the main BFP stator and rotor as well as the exciter stator and rotor.

### Employer's requirements for the service

#### Quality Control and Assurance

While this Work Instruction contains quality control and assurance requirements, it does not cover all material and workmanship issues that shall be addressed by the Contractor through a Quality Management System as referred to in the QM58 document "Suppliers Quality Management specification" for category 2 plant.

Furthermore, all activities will be done as per to the level of quality management stipulated therein and also taking into account input from Majuba Engineering Section, Risk assurance department and Management. The Contractor provides qualified and competent teams with all the necessary equipment to provide the Service.

The following are minimum requirements for Quality Control and Quality Assurance programs:

- a. The *Contractor* shall have a QA program that, as a minimum, meets the requirements of ISO 9001-2015 or latest addition thereof or *Employer* approved QA Program. Any sub-contractors completing any portions of the motor repair and reconditioning work shall meet this requirement. The *Employer* shall accept the QA program before the start of any motor refurbishment or repair work.
- b. If new and/or replacement parts are procured, the *Employer* has the right to inspect these parts. Technical documentation shall be made available to the *Employer* for inspection. The documentation shall include but is not limited to the following, where applicable:
  - Manufacturer's technical data for new stator lead cables,
  - New bearing inspection and tests data, and
  - Testing and Inspection reports
- c. The *Employer* has the right to impose witness and hold points, even after an order has been placed. Witness and hold points can only be waived by the *Employer's* Quality Assurance or designated representative in writing. The Contractor shall provide appropriate notice of an impending witness or hold point at least 48-hours prior to the event.

#### BFP Motor Overhaul Works Information

The overhaul works shall consist of the following high level works information:

1. The task will consist of stripping the motor completely, removal of the stator, rotor, radiator and bearings.
2. Radiator to be send for a pressure test.
3. Unthread rotor, Megger stator, rotor and exciter.
4. All HV connection and leads to be checked and certified

5. Clean stator and rotor with dry ice and respray with insulating paint.
6. Inspect rotor end winding supports with endoscope
7. Rotor fan blades and end blocks to be inspected
8. Bearings to be refurbished and reinstalled.
9. Bearing housing, Motor Hood and pedestal to be cleaned.
10. Clean and pressure test cooler.
11. Install new Rockwool in Motor Hood
12. Clean bearing housing and fit insulation, remove bearings and Replace insulation, take sizes and make gaskets.
13. Fit bottom shells, new thermocouples and test.
14. Megger stator, rotor and thread rotor. Record readings
15. Fit radiator to cooler and assemble to drawing and box up.
16. Supply new Labyrinth seals and oil retaining seals manufactured to OEM specification for the motor and excitor bearings and install.
17. Rotor trim balancing to be done to the required specification.
18. Recommissioning and test the performance of the motor at loaded conditions.
19. A one-year warranty must be available on the workmanship

The above-mentioned tasks are to be completed on site within 26 days – the duration is applicable for a single machine. The *Contractor* of whom the contract is awarded shall allow for daily inspections to be performed by the Responsible Person (RP) and inform when Quality checks are required. The *Employer* shall provide an authorized Responsible Person (RP) to be responsible for HV permit and supervision, authorized crane operators and competent riggers. The contractor of whom the contract is awarded must inform the RP a day in advance to request a rigger and crane driver.

The following terms shall be accepted by the Contractor of whom the contract is awarded:

- i. Supply of all materials required for the overhaul works.
- ii. Submission of a dynamic works program as well as QCPs together with returnable tender documents.
- iii. Any damages to Apparatus must be compensated by the contractor of whom the contract is awarded.
- iv. Any standing time must be recorded and acknowledged by signature off EMD Manager.

The following works information is a requirement of the Employer, the information is to be utilised by the Contractor so that he/she is aware of the way the Employer wishes for the works to be performed. The way the assessment, dismantling and assembly tasks are to be performed are iterated under sections 1.2.2.1 – 1.2.2.9.

## Motor Assessment

- a. A visual inspection shall be made to assess the general condition of the motor exterior for cracks, broken welds and missing parts. Photographs are to be taken sufficient to document the motor construction, including accessories.
- b. If the motor was in a working condition all standard routine tests are to be performed on the motor, including the following (where applicable):
  - Phase resistance test,
  - Phase balancing and vibrations, during a test run.
  - Bearing insulation measurement.
  -
- c. If failed components are identified during the assessment, the Contractor shall attempt to verify the cause and reflect the findings in a report.
- d. Measure and record the shaft extension run out of the motor shaft (Axial Float).
- e. Measure run out on all Vibration probe tracks, in board and outboard

## Motor Dismantling

This task shall comprise of stripping the motor completely – removal of the radiator/cooler, main motor and exciter bearing shells as well as unthreading of the rotor.

Motors shall be dismantled as follows:

- a. Motors that involve either warranty or insurance claims shall not be disassembled without the Employer giving a written 'go ahead' for the Contractor to commence with the disassembling. Arrangements shall be made for interested and affected parties to witness the dismantling. The *Employer* Assessment SOW shall have a HOLD-POINT for such a requirement. The *Repairer* is required to take pictures and records throughout the disassembly.
- b. All motor components shall be marked with either the motor manufacturer's serial number or *Contractor's* job number during disassembly. Any new stamp identifications added shall be applied to low stress areas with low stress punches. Old nameplates or stamp identifications of previous refurbishments on the motor are not to be removed. Bolts and small parts, from the motor shall be stored in dedicated containers marked with a *Contractor's* job number.
- c. End brackets and frames shall be clearly match-marked.
- d. All components are to be properly stored thereby ensuring storage conditions do not adversely affect the components.
- e. Records concerning the bearings are to be documented.
- f. Rotor removal shall utilise one or two cranes to move the shaft, with a close-fitting pipe installed over one end of the shaft to act as a shaft extension. Attention shall be paid to the following quality control requirements during this process:
  - The location, make, type, size, clearances and orientation of bearings,
  - Care shall be taken that the slings do not damage either the bearing surfaces or the rotor.
  - Under no circumstances shall the stator windings be touched by any of the parts being moved.
- g. Additional information gathered during disassembly inspections shall be used to support the cause of failure analysis. Failure causes shall be discussed with the *Employer* before repair work proceeds, unless this is waved in the contract.

## Pre-Cleaning Assessment

Prior to the motor being cleaned, all components shall be inspected and tested. Perform insulation resistance tests on the main motor stator and rotor as well as exciter stator and rotor to ensure that the components weren't damaged during the dismantling works.

Due to motor contamination however, some components may require cleaning for a complete inspection and testing. The *Contractor* shall notify the *Employer* of any anomalies identified and shall document findings with photographs.

## Cleaning

- a. The cleaning and drying method should not adversely affect the insulation ageing and integrity.
- b. The stator and rotor of both the main motor and exciter shall be cleaned with dry ice and thereafter resprayed with insulating paint. Since the dry ice method of cleaning shall be employed, a method statement is to be provided to the Employer for review. The method statement is to include preventative measures to mitigate the risk of insulation damage.
- c. Cleaning shall be considered complete if all the air-vents have been unblocked and all contaminants intended to be cleaned-off the component surfaces have been removed.
- d. The bearing housings, motor hood, inner framework, air baffles/chambers and pedestals are to be cleaned with a suitable non-conductive degreaser.

## Stator Assessment

The assessment of the stators shall include but is not limited to the minimum following requirements:

- a. The motor lead insulation shall be inspected for cracks, frays, signs of brittleness, and swelling from oil contamination and other contaminants. Motor lead lugs shall be inspected for signs of overheating. A pull check for loose crimp connections shall be performed.
- b. Inspect the stator insulation for signs of partial discharge (white powder-like deposits), cracking at blocking and bracing, dryness, brittleness or puffiness.
- c. Stator slot wedges and end-winding bracing shall be inspected for looseness, missing and broken parts.



- d. Inspect the stator core laminations for looseness, rubs, localized heating and vent duct blockages. Core clamping fingers and duct spacers shall be checked for looseness and missing parts.
- e. If the stator core has insulated through-bolts, the insulating washers at the ends shall be checked for cracks. The insulation resistance between the bolts and core should be measured and recorded.
- f. Air baffles and mounting hardware shall be inspected for defects and missing parts.

If the motor has been subject to an insulation failure, the *Employer* is to be notified immediately.

## Rotor Assessment

The rotor assessment shall include the following checks:

- a. The rotor core shall be inspected for looseness, overheating, loose, cracked, or missing clamping fingers and vent duct spacers, rubs, localized heating and blocked vent ducts. If overheating is found, inspection for signs of cracked rotor laminations or core migration is required. If defects are found, the *Employer* shall be immediately notified.
- b. The motor fans shall be visually inspected for cracked or loose blades, and on welds and hubs using the dye penetrant and ultraviolet light method. Looseness between the fan and its hub shall be checked.
- c. An RSG test is to be conducted on the rotor windings
- d. Visually inspect the rotor shaft for cracks using the dye penetrant and ultraviolet light method.
- e. Check the straightness of shaft extensions, bearing journals, and rotor body by conducting total run-out measurements. Document all measurements recorded.

## Bearing Assembly

The assessment of bearing assemblies shall include the following:

- a. Inspection and measurement of sleeve bearing journal housings for correct fits to their respective bearings, in accordance with design values from either the motor OEM drawings or the bearing manufacturer's catalogue. From these measurements, compare the required bearing housing fit to the design values.
  - Record bearing fit dimensions.
  - Performing a visual check of the bearing housing bore for evidence of fretting that may indicate a loose fit between the bearing and its housing.
- b. A check of the bearing white metal surfaces for evidence of wipes and wear. Measurement of the sleeve bearing bores is required at three locations and records of measurements to be in an Assessment Sheet. If the white metal wear pattern indicates misalignment or other problems, the details of this shall be recorded.
- c. Determine the bore roundness of sleeve/tilting pad bearings.
- d. The bearing insulation on the outside of the sleeve bearings must be replaced.
- e. With the bearing shells installed, bearings shall be checked for tolerances, concentricity and nip. On fitting of the rotor into the stator, bearing clearances and lay shall be checked to ensure correct fitting of the shell.
- f. Blueing and plastic gauges are to be used if the lay is not greater than 90%. The responsible engineer is to be contacted for permission before any scrapping takes place. With the modern manufacturing techniques, scrapping should not be necessary. All joints, inlets, drain plugs etc. shall be sealed to prevent oil leaks. Copies of the blueprints are to be provided as part of data pack, together with copies of the measured bearing tolerances.
- g. Minor white metal scratches shall be repaired by polishing the damaged surfaces with a polishing pad such as Scotch-brite ® cloth.
- h. Oil reservoirs shall be leak-checked after necessary repairs and final inspections have been completed. To test for leaks, fill the reservoir with a low viscosity cleaning fluid such as Varsol ® and inspect external surfaces and connections. After leak tests, Varsol® shall be drained and any remaining residue shall be removed by wiping with a dry, lint free, cloth.
- i. The oil reservoir shall be thoroughly cleaned.
- j. Replace all damaged bearing insulation components including insulating sleeves, washers, bearing anti-rotation pins with new components made from Bakelite, or equivalent, epoxy glass material.

## Motor Accessories

- a. All failed space heater elements shall be replaced with new elements with the same Wattage, Voltage, and surface temperature rating. Unless otherwise agreed between the Repairer and Employer, new space heaters shall be rated to operate at half their rated voltage and connected in parallel.
- b. All damaged or aged heater wiring shall be replaced with high temperature insulated wires, with the same or increased conductor size.
- c. Rewired space heater circuits shall be checked to verify conformance to original circuit configuration.
- d. All damaged bearing RTD wiring shall be replaced, provided the RTD element indicates the correct temperature.
- e. After repairs, bearing temperature detectors shall be checked for accuracy.
- f. The motor cooler/radiator is to be cleaned, and pressure tested. The cooler shall be tested as per the OEM's recommendations and a certificate provided.
- g. Replace the Rockwool in the motor and exciter hoods.

## Motor Assembly

All tests and inspections conducted as part of the motor assembly shall be recorded on a motor build report.

General requirements are as follows:

- a. Clean conditions shall be practiced ensuring no materials that would affect motor performance are left inside the motor, and shaft landing surfaces shall be protected from damage due to mishandling.
- b. Insulation resistance tests to be performed on the main rotor and stator as well as the exciter rotor and stator before threading the rotor into the stator. All measurements are to be recorded.
- c. Thread the rotor into the stator.
- d. Fit bottom bearing shells.
- e. Insulation resistance tests to be performed on the main rotor and stator as well as the exciter rotor and stator after threading the rotor into the stator. All measurements are to be recorded.
- f. Fit new bearing thermocouples and thereafter test the instrumentation installed.
- g. Install the cooler, assemble as per the drawing and thereafter box up.
- h. Secure bolts by coating threads with a durable anti-corrosion/anti-seize compound such as Permatex® or Loctite®. All bolts installed during assembly of motor components or motor component attachments shall be tensioned with proper bolt stretch via torque wrench or other acceptable means.
- i. Care should be taken when assembling pipe connections on the bearing housings to prevent twisting inside the oil reservoir.
- j. Care should be taken when assembling pipe connections on the cooler/radiator to prevent water leakages.
- k. Install Split Seals on the exciter and main motor.
- l. Trim balance the rotor, results to be shared with engineering and EMD for acceptance.
- m. Recommission the motor by performing a loaded test run.

## Interpretation and terminology

The following abbreviations are used in this Service Information:

Abbreviation	Meaning given to the abbreviation
AC	Alternating Current
BFP	Boiler Feed Pump
CACA	Cool Air Cool Air
CACW	Cool Air Cool Water
CDSS	Contractor Document Submission Schedule
COID	Occupational Injuries and Diseases
DAR	Dielectric Absorption Ratio
DAR	Dielectric Absorption Ratio
DC	Direct Current
DE	Drive End
EMS	Environmental Management System
ETD	Embedded Temperature Detector
IEC	International Electro technical Commission
IEEE	Institute of Electrical and Electronics Engineers
IR	Insulation Resistance
ISO	International Standard Organisation
KPIs	Key Performance Indicators
MS	Microsoft
MV	Medium Voltage
NDE	Non-Drive End
NEC	New Engineering Contract
NEC	New Engineering Contract
NEMA	National Electrical Manufacturers Association
O&M	Operating and Maintenance
OEM	Original Equipment Manufacturer
OHSA	Occupational Health and Safety Act
ORHVS	Operating Regulations for High Voltage System
PI	Polarization Index
RTD	Resistance Temperature Detector
SANS	South African National Standards

SAQA	South African Qualification Authority
SOW	Scope of Work
VAT	Value Added Tax

### Documents required from the supplier

As per requirements in QM58 Document "Quality Control and Assurance"

- Project Program
- Alstom Synchronise Motor Assembly specification and recording
- Works report after each motor completion
- Safety File
- Proof of previous work on Alstom 8.8MW motors

### Management strategy and start up.

The *Contractor* shall provide a program for the overhaul works as stipulated in Section 1.2.2 of this document. Due to any defect or unplanned work that may arise from the assessments/inspections performed, the *Contractor* shall submit a revised program with the activities required to ensure that the machine is returned to service without any outstanding defects. The program is to be submitted to the Service Manager/Contracts Supervisor and relevant System Engineer within 48 hours.

The program shall be in the form of a Gantt chart (either in an Adobe Acrobat Document/Microsoft Excel Worksheet format), and should include the following:

- a. Start Date
- b. Description of Activities
- c. Duration of Each Activity
- d. Progress Tool to Track Activities
- e. End Date

In the event that the program is to be revised due to defects or circumstances that have prolonged the timeline to complete the overhaul, the following information shall be specified on the revised program:

- a. Description of Defect
- b. Reasons for Lengthy Repairs
- c. Date Machine will be Returned to Service

### Management meetings

- a) The Contractor and Employees are to report to the BFP Maintenance offices located at Unit 3, 20m level at Majuba Power Station, each morning and afternoon. This is in order to sign the RP's workers register before work commences and when work for the day is complete. This action is compulsory.
- b) The Site Manager must report daily to the contract supervisor to update the works program
- c) A one (1) day notice must be given to the Contract Supervisor when cranes, crane operators, riggers or any other service or personnel is required. An approximate time must also be submitted.
- d) A one (1) day notice must be given to the Contract Supervisor if the *Contractor* wishes to work overtime.
- e) Any delay caused by the failure to give notice as described in (c) and (d) will be at the *Contractor's* cost.

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:
Daily toolbox Talk and Permit meeting	Daily at 07H00&16H00	BFP Maintenance Services U3 20m Level	All Contractors
Overall contract progress and feedback	Daily 07H30	BFP Maintenance Services U3 20m Level	Contractor Site Manager

Meetings of a special 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 attendance 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.

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

Designation	Supervisor/Foreman	Technicians/Tradespersons
Quantity	Minimum of one	Determined by the contractor depending on the works.
Special Requirement	Required on site to supervise all works.	Determined by the contractor, will be works dependant.
Minimum Qualifications	Experienced and Competent MV Motor Technician	Competent MV Motor Technician/Tradesperson: Fitter & Turner/Millwright/Electrician
Experience	Minimum of 10 years Related Experience	Minimum of 3 years Related Experience
Name:		
Tel		
Name		
Tel:		

a) Competent MV motor technician/tradesperson will for the purpose of this contract mean a person who:

-

- a. Has either completed an apprenticeship in the trade of fitting & turning, millwright or electrical works.
- b. Has completed an electrical or mechanical trade qualification and has had at least three years post qualification general practical experience on MV motors or
- c. Has obtained a minimum of a NQF level 5 electrical or mechanical engineering qualification and has had at least three-year post qualification general practical experience on MV motors.

b) The Contractor's Site Supervisor ensures that only competent persons be allowed to work on plant. The Employer's Service Manager is entitled to verify the qualifications of the Contractor.

- c) The Contractor's Supervisor/ Foreman must be knowledgeable about the conditions and scope of work contained in this contract and capable of executing the scope of work.
- d) The Services Manager may, having stated reasons, instruct the Contractor to remove a key person. The Contractor then arranges that, after one day, the key person has no further connection with the work included in this contract.
- e) The Contractor may not replace any of the key persons, without prior written request and approval thereof from the Services Manager.
- f) The above qualifications and experience requirements are a minimum
- g) The contractor must provide hourly rates for each of the above key persons in the price list.

### Provision of bonds, low performance penalties and guarantees.

A one guarantee is required on all workmanship.  
The following Penalties will be applicable

Task	Specification	Comply	Not Comply
Safety File approval	One month before work commencement	R0	R500/Day
Program Approval	One month before work commencement	R0	R500/Day
QA Approval	One month before work commencement	R0	R500/Day
		No Days Missed	Days Missed
Program compliance	Daily update to indicate works remain on time	R0	R500/Day
		No Delay	Late Completion
Work Completed on time	Work completed on day 26	R0	R1000/Day
		As per Employer requirements	Damaged Equipment
Black Box Equipment	No Damaged to equipment and box packed neatly	R0	R500/item and Item must be replaced
		No Rework	Rework
Rework	No Rework done on machine	R0	R1000/incident plus applicable delay

Penalties are limited to 10% of task order cost

## Documentation control

Document management control will be handled as per the employer's document and records management procedure 32-6, 32-1 and 32-21 which is obtainable from the *Service Manager*. All communication will be in writing.

All NEC standard forms should be used, e.g. *Task orders, Early Warnings, Defect certificates and Assessments*.

The following documents will be approved and accepted before any work commences:

- i. The contractor's safety file must be approved before work commences.
- ii. All contractors must undergo induction before access to site may be granted.
- iii. *Contractor's* personnel to receive Temporary Security Entrance Permits once the safety file and induction is complete.
- iv. Two (2) certified identification document (ID) copies, for each of the Contractor's employees, will be required.
- v. All QCPs to be approved before work commences
- vi. The program used to execute work must be approved before work commences and must be accurate and detailed as progress will be monitored on a daily basis. Progress will be monitored according to this program and action will be taken
- vii. Inspection report after dis-assembly of Synchronise Motor viewed by System Engineer and end user Supervisor/Manager before work can commence.
- viii. The Alstom 8.8MW specification and clearance drawing must be submitted after the work is complete - compulsory.
- ix. A motor overhaul report must be submitted after the work is complete and payment will not be released until this document is approved.
- x. The service report must consist of before and after photos, before and after settings, faults found and rectified, electrical readings at various stages, Photos of defects found. Clearances, brief summary of work done, Alstom 8.8MW motor specification and clearance drawing, completed and signed QCP, cooler pressure test certificate. Any other applicable information.

## Invoicing and payment

Within one week of receiving a payment certificate from the *Service Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Service Manager's* payment certificate.

The *Contractor* shall address the tax invoice to XXXXXX 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)

## Invoice Price versus Order Price

It is important that the value stated on the Invoice must be the same as the value stated on the Order. If the Invoice value is different from the Order value payment of the invoice will be delayed. It is strongly recommended that if there are any discrepancies on the Invoice, it be rectified with the Buyer BEFORE it is submitted for payment.

## Labour

All South African Labour Laws must be adhered to.

### **Contract change management**

If an additional defect is found outside of the scope of work, the defect must be reported to the Contract Manager immediately. No work may be carried out until the contract has been changed and a go ahead has been given by the commercial department.

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

N/A

### **Insurance provided by the *Employer***

First read TSC3 Core Clause 86.1 and then add anything necessary for the management of insurance related issues such as a cross reference to where procedures for making claims can be found. Also provide contact details for persons capable of being able to answer any insurance related queries the Contractor may have, as well as to whom the information required by Marine Insurance (if any) may be addressed.

### **Training workshops and technology transfer**

Describe type and frequency of any on job training workshops, as well as any obligation for technology transfer being included as part of the service or at the end of the service period.

### **Design and supply of Equipment**

N/A

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

#### **Equipment**

The Contractor may use the Employers specialised lifting equipment. An inspection and inventory will be done before work commences and any missing or damaged equipment will be for the account of the contractor.

The contractor is responsible to fetch and install the clean conditions barricades and to replace them when the work has been completed.

### **Information and other things**

#### **The Contractor is to supply the following at the end of each Service Period**

- Data books
- Bearing certificates
- Cooler certificates
- All electrical test results
- Photos
- Vibration report
- Assessment report
- Instrument calibration certificates



## Health and safety, the environment and quality assurance

### 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
- Distribution: Alex Stramrood
- Enterprises: Jace Naidoo
- Corporate: Kersemi Pather

The *Contractor* shall comply with the health and safety requirements contained in the Safety Department attachment to this Service Information.

### Environmental constraints and management

Refer to Majuba Waste Management procedure BIA-ENV-01

The *Contractor* shall comply with the environmental criteria and constraints stated in Annexure \_BIA-ENV-01

### Quality assurance requirements

- All QCP's to be approved before work commences
- The program used to execute work must be approved before work commences and must be accurate and detailed as progress will be monitored on a daily basis. Progress will be monitored according to this program and action will be taken.

## Procurement

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

## People

### Minimum requirements of people employed

All Key Personal to be relevant Artisans and Assistants have experience on Alstom High speed motors

### 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.

### 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.

## Subcontracting

### Preferred subcontractors

All sub-contractors used to be submitted with the tender for pre-approval

### Subcontract documentation, and assessment of subcontract tenders

All Health and Safety specifications applicable to the main contractor are applicable to sub-contractors.

### Limitations on subcontracting

Only the bearing refurbishment and cooler checks may be sub-contracted. Any other subcontractor must first be approved of by the Employer before work may progress

## Attendance on subcontractors

N/A

## Plant and Materials

### Specifications

## BFP Main Motor Component Specifications

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### General Specifications:

Type	– Revolving Field, Cylindrical Rotor, Brushless
Enclosure	– Closed Air Circuit Water Cooled (CACW)
Insulation Class	– F
Air Gap	– 25mm
Speed	– 5600RPM
Power Factor	– 0.85
Voltage	– 2700V
Current	– 1119A
Frequency	– 93.33Hz
Number of Phases	– 6
Number of Poles	– 2
Output Power	– 8.8MW

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### Mass of Components:

Rotor (including exciter rotor)	– 5.48 Tonne
Main Stator	– 13.10 Tonne
Main Bearings	– 0.60 Tonne
Heat Exchanger (full)	– 1.50 Tonne
Exciter Stator	– 0.40 Tonne
Exciter Pedestal	– 0.14 Tonne
Exciter acoustic Hood	– 0.38 Tonne
Total Weight of Motor	– 30 Tonne

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### Stator Temperature Detectors:

Make	Sensing Devices Ltd
Type	Platinum Resistance
Alarm Setting	135°C
Trip Setting	145°C

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### Make-up Air Filters:

Make	Davis Industrial Filters Ltd.
Type	150x150x50 Front Withdrawal

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### Anti-Condensate Heaters:

Make	Bray Chromalox Ltd.
Type	EV
Voltage	220V, 50Hz
Rating	250W
Number off	5

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### Motor Bearings:

Make	Glacier Metal Co. Ltd.
Type	HSR 18 Tilting Pad
Load between pads	25kN
Diametrical clearance between pivots	0.353/0.274mm
Oil Grade	ISO VG32 at 50°C
Oil Inlet Temperature	50°C
Oil Outlet Temperature	70°C
Oil Inlet Pressure	100-200kPa
Oil Flow @ 5600RPM	0.55l/s

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**Bearing Thermocouple:**

Make	Universal Thermosensors Ltd.
Type	Chromel/Alumel
Extension Lead Spec.	L13K
Alarm Setting	105°C
Trip Setting	110°C

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**Earthing Brush:**

Make	Morgan Components Ltd.
Brush Holder Type	ZKA (Radial) 10x16mm
Brush	Morgan, crucible brush grade 'CM' standard length Insulated Pigtail, 10x16x32mm with slotted double clip
Spring Pressure	284gm

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**Heat Exchanger**

Water Design Pressure	1000kPa
Hydrostatic Test Pressure	1500kPA

## BFP Exciter Specifications

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### Exciter Details:

Type	Brushless
Speed	5600RPM
Insulation	Class F
Air Gap	2mm
Number of Poles	4
Full load output (diode wheel)	204ADC, 204VDC
Armature Connection	Star
Armature Resistance @ 20°C	0.012Ω per phase
Stator Resistance @ 20°C	0.054Ω per phase

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### Exciter Bearing

Make	Glacier Metal Co. Ltd.
Type	HSR14 Tilting Pad
Load between pads	2.3kN
Diametrical clearance at pivots	0.237/0.171mm

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### Exciter Bearing Thermocouple:

Make	Universal Thermosensors Ltd.
Type	Chromel/Alumel
Extension Lead Spec.	L13K
Alarm Setting	105°C
Trip Setting	110°C

### Correction of defects

All Defects must be repaired immediately

### 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.

### Tests and inspections before delivery

N/A

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

N/A

### **Cataloguing requirements by the Contractor**

N/A

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

No Work may commence without but not limited to:

- A permit to work
- Workers Register signed
- All PPE being worn
- Any unsafe condition exists

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

- All contractors will need to receive a Security Entrance permit after the safety file has been approved and induction has been completed.
- PPE to be worn at all times
- Contractors are only allowed in the designated areas of their work
- Eskom Life Saving Rules will apply

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

- All Standing time to be recorded
- Work times will be from 07H00 to 16H00 Monday to Thursday, 07H00 to 12h00 on Fridays
- Any overtime hours must be arranged one work day earlier
- Any Rigger or Crane Drive required must be arranged one work day earlier

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

- There is a medical centre on site for emergency incidents
- All emergency sirens must be adhered to as explained in the safety induction course

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

This sub-paragraph may not be required in a service contract or if these matters are dealt with in the general environmental requirements referred to in section 3 above.

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

1) the Contractor is required to adhere to and comply with any statutory or legal entity as required

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

N/A

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

- The Contractor may use the Employers specialised lifting equipment. An inspection and inventory will be done before work commences and any missing or damaged equipment will be for the account of the contractor
- Riggers, cranes, crane operators, scaffolding and RP's will be provided by the Employer

## **Site services and facilities**

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

- Ablution facilities
- Waste disposal
- Electricity
- Water

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

- Accommodation
- Transport
- Tools and equipment required to complete the works
- Meals

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

N/A

## **Hook ups to existing works**

N/A

## **Tests and inspections**

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

After all the work is done the motor must be recommissioned and test run in conjunction with the Employer. Performance and shaft vibrations must be recorded. If necessary, trim balancing must be carried to ensure acceptable vibration levels

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

N/AList of drawings

## **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