

# Strategy

**Engineering** 

Title: **Tender Technical Evaluation** 

Strategy – Pneumatic Lubrication Hydraulics and Special Services at Matimba Power Station

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#### 1. INTRODUCTION

### 1.1 MATIMBA POWER STATION.

Matimba Power Station is in Lephalale, in South Africa's Limpopo Province. Designed to generate 4000 MW, Matimba - the Tsonga word for "Power" – was once the largest direct dry-cooled Power Station in the world, with six 665MW turbo-generator units. The annual send-out power from Matimba amounts to approximately 24,000GWh. Matimba is the holder of the world record of 80 days for six units on load.

Technical Evaluation Strategy (TTES) defines the following with regards to this works:

- Qualitative Evaluation Criteria
- Technical Evaluation Team (TET) Member Responsibilities
- Acceptable / Unacceptable Qualifications

### **Technical details:**

- 1.1.1. Six 665 MW units
- 1.1.2. Installed capacity: 3 990MW
- 1.1.3. 2001 capacity: 3 690 MW
- 1.1.4. Design efficiency at rated turbine MCR (%): 35.60%
- 1.1.5. Ramp rate: 28.57% per hour
- 1.1.6. Average availability over last 3 years: 93.67%
- 1.1.7. Average production over last 3 years: 23 789GWh

#### 2. SUPPORTING CLAUSES

#### 2.1 SCOPE

The scope of work covers the repairs of all hydraulic, pneumatic, and special services at Ash, Coal and Auxiliary plant at Matimba Power Station.

## 2.1.1 Purpose

The purpose of this scope is to define the maintenance hydraulics and pneumatics requirements for Matimba. The station is expected to perform as per system demand and hydraulics and pneumatics management strategy efforts must support this requirement. It is therefore imperative that the successful and suitably qualified Partner aligns his/her organisation fully to the hydraulics and pneumatics activities and processes laid down in this scope.

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## 2.1.2 Applicability

This scope is applicable to all special services activities associated with Matimba Power Station and adjacent Eskom power stations as per and when required. This is a period of 5 years or the depletion of funds, whichever comes first.

#### 2.1.3 Normative/Informative References

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

#### 2.1.4 Normative

- 2.1.4.1. Occupational Health and Safety Act, 85 of 1993
- 2.1.4.2. Supplier Contract Quality Requirements Specification
- 2.1.4.3. SABS Quality Standards
- 2.1.4.4. Occupational Hygiene
- 2.1.4.5. Quality Programme ISO9000/1/2
- 2.1.4.6. Construction Regulations 2014
- 2.1.4.7. SANS 10085-1:2004 Code of Practice for Design, Erection, Use and Inspection of Access Scaffolding
- 2.1.4.8. 32 -303 Requirements for The Safe Processing, Storing, Removing and Handling of Asbestos and Asbestos Containing material, Equipment and Articles
- 2.1.4.9. SABS 1445-2: 1990 Thermal insulation materials for industrial applications Part 2: Metal-mesh-faced mineral fibre mattresses.

#### 2.1.5 Informative

Contractor employees shall comply with Eskom's policies and site regulations, including non- use of cell phones in restricted areas, adherence to Eskom's cardinal rules, adherence to Generation Occurrence Management Procedure, no smoking policy, Maintenance URS, etc. These requirements will be detailed during the induction training process and are stipulated in the referenced documents and their references.

- 2.1.5.1. Plant Safety Regulations
- 2.1.5.2. Programming and Progress Monitoring Services-Equipment Supply Contractor
- 2.1.5.3. Accident Prevention Activity Report
- 2.1.5.4. Eskom Environmental Practices and Standards
- 2.1.5.5. Eskom vehicle and driver safety management
- 2.1.5.6. Eskom Standard NWS 1454 Specification for Thermal Insulation
- 2.1.5.7. GGSS 1181 Specification for chemical product and material used in a power plant
- 2.1.5.8. GGA 1182 Control of chemical products in a power station
- 2.1.5.9. 36-821 Minimum specification for steam turbine oils

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- 2.1.5.10. SAB 5555 Transformer oil
- 2.1.5.11. GGSS 0879 Minimum specification for reciprocating air and gas compressor oil
- 2.1.5.12. GGSS 0900 Eskom minimum specification for semi fluid enclosed gear greases
- 2.1.5.13. GGSS 0895 Minimum specification for general purpose greases
- 2.1.5.14. GGSS 0897 Eskom specification for molybdenum and graphite.
- 2.1.5.15. Include the relevant SANS for splicing and the Eskom standard.

#### 2.2 DEFINITIONS

Definitions	Explanations			
Base/ Core crew	A complement of the <i>Contractor's</i> personnel based on site for the duration of at least one year and detailed in the Site Addendum			
Contract services	The services specified in this contract including supply and installation services that complies with all the requirements stated in the Service Information.			
Contractor	Service provider contracted for supply specific service to ESKOM Matimba power station.			
Employer	Eskom or Eskom Matimba power station representative appointed in writing.			
Forklift	A vehicle with a pronged device in front for lifting and carrying heavy loads.			
Hydraulics	the branch of science and technology concerned with the conveyance of liquids through pipes and channels, especially as a source of mechanical force or control.			
Oil	viscous liquid derived from petroleum, especially for use as a fuel or lubricant.			
Outage	A planned or unplanned shutdown project related to one or more of the <i>Employer's</i> Power Station units			
Pneumatics	containing or operated by air or gas under pressure.			
Regular site maintenance and repair work	Work that does not form part of an <i>outage</i> scope of service. This could include opportunity maintenance performed while a unit is on <i>outage</i>			

## 2.3 ABBREVIATIONS

Abbreviations	Explanation
DoL	Department of labour
KPA	Key performance area
KPI	Key performance indicators

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DLR	Daily Labour report
GO	General Overhaul
IR	Interim Repair
BTI	Boiler Tube Inspection
BTL	Boiler Tube Leak
OD	Outside diameter
SOS/SOW	Scope of service/ Scope of work
PCLF	Planned capability loss factor
PPE	Personal protective equipment
QCP	Quality control plan/ inspection and test plan
QMP	Quality management programme
SABS	South African bureau of standards
SAP	System, application, products (plant maintenance, procurement, finance, and materials management.
SHE	Safety, health and environment
UCF	Unit capability factor
UCLF	Unplanned capability loss factor
URS	User requirements specification

## 2.4 ROLES AND RESPONSIBILITIES

### 2.4.1 Contract Manager:

- 2.4.1.1. Co-ordinating and manage contract budget and expenses.
- 2.4.1.2. Ensure that the contractor operates within the budget.
- 2.4.1.3. Holds **monthly** meetings with the contractor.
- 2.4.1.4. Communicate technical interface between Eskom and the contractor.
- 2.4.1.5. Ensure that all work performed complies with the OHS act regulation and quality requirements.
- 2.4.1.6. Review, verify, and approve receipt of services/deliverables from the contractor.
- 2.4.1.7. Manage and maintain contract records and correspondence between both parties.
- 2.4.1.8. Ensure that the contractor compliance with the conditions of contract.
- 2.4.1.9. Resolving any deviations and breaches in relation to the agreed conditions of the contract
- 2.4.1.10. Contracts manager must keep the original copy to file for history purposes.

#### 2.4.2 Contractor:

2.4.2.1. The Contractor to provide technical support and advice on constant failure trends of the equipment.

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- 2.4.2.2. Ensure that the application and implementation of appropriate maintenance tools and innovative techniques.
- 2.4.2.3. Develop Key performance Indicator (KPI), objectives and targets which support and which in line with the Employer's objectives.
- 2.4.2.4. To provide adequate resources capabilities to carry out maintenance and inspection work and that support the Employer's objectives.
- 2.4.2.5. The contractor to adhere to all Employer's health and safety requirements and procedures on site
- 2.4.2.6. All other maintenance activities to be performed in accordance with the relevant procedure and specification where applicable.
- 2.4.2.7. The contractor shall record and report to the Employer the following.
- 2.4.2.8. The contractor shall provide weekly and monthly inspection reports on excel.

### 2.5 PROCESS FOR MONITORING

#### 2.5.1 Technical KPIs

Item	KPI	5 Targets
no		
1	No. of PM's due	0
2	No. of P1-P4 Overdue	0
3	Manpower Utilisation	100%
4	No. of rework	0
5	Total hours overtime	0
6	Safety finding	1/six months
7	Assessment > 25 <sup>th</sup> of Month	0
8	No. of NCR's	< 4
9	SD & L	100% in the fourth year
10	PSR authorisation within 6 months	100%

## 2.5.2 SHEQ KPIs

Item	KPI	Targets
1	SHEQ Performance Report	>95%

## 3. SITE VISIT

- 3.1.1. Clarification meeting and site visit is compulsory for all contractors.
- 3.1.2. Procurement officer to form part of the site visit team.
- 3.1.3. Invited contractors to bring own PPE during site visits.
- 3.1.4. All official communication will be in the form of writing.

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- 3.1.5. A register will be signed by all in attendance and kept as record.
- 3.1.6. Contractor who does not attend site visit will not be considered.

#### 3.1 RELATED/SUPPORTING DOCUMENTS

Not Applicable

## 4. TENDER TECHNCIAL EVALAUTION STRATEGY

## 4.1 TECHNICAL EVALUATION THRESHOLD

The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 75%.

### **4.2 TET MEMBERS**

**Table 1: TET Members** 

TET number	TET Member Name	Designation
TET 1	Tshegofatso Modiba	Coal Plant System Engineer
TET 2	Shandukani Manena	Ash Plant System Engineer
TET 3	David Du Plessis	Compressor System Engineer

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### 4.3 MANADATORY TECHNICAL EVALUATION CRITERIA

**Table 2: Mandatory Technical Evaluation Criteria** 

	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Motivation for use of Criteria
1.			

## 4.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

**Table 3: Qualitative Technical Evaluation Criteria** 

	Qualitative Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)		Criteria Sub Weighting (%)
1.	The tenderer to submit proof that they have successfully performed Power Plant Pneumatic, Hydraulics and special services work as per scope of work.	Proof of orders received, OR contract copies stamped and signed by the client with proof of completion. Only orders or contracts submitted with verifiable proof of completion	5 or more references submitted and a total of five or more years working experience.	5	
	Including but not limited to: Coal Stacker Reclaimer Actuators	certificates for the services mentioned will be considered valid. Please provide contactable references required	3 to 4 references submitted and a total of two to four years working experience.	4	60
	Fluid Couplings Hydraulic System Turbo Lube		1 to 2 references submitted and a total of one to two years' experience.	2	
	Accumulators  Conditioner lubrication system  Air cylinders		No evidence submitted/ submitted with deviations.	0	

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<u>ower</u>	<u>Station</u>	1 ugo.			
	Grease barrel lubrication system				
	Oil filtering systems				
2.	Employee work experience				25
2.1	Site Supervisor Experience	The tenderer shall provide CVs of the site supervisor with relevant information on levels of experience with Pneumatic, hydraulic and special service lubrication systems.	The Supervisor has more than 5 years' experience with reasonable levels of experience in Pneumatic, hydraulic and special service lubrication systems with at least National Technical Diploma and power plant related experience.	5	5
			The Supervisor has between 3- and 5- years' experience with reasonable levels of experience in Pneumatic, hydraulic and special service lubrication systems with at least National Technical Diploma and power plant related experience.	4	
			The Supervisor has between 1- and 3- years' experience with reasonable levels of experience in Pneumatic, hydraulic and special service lubrication systems with at least National Technical Diploma and power plant related experience.	2	
			No Submission of documentation	0	
2.2	Site Manager Experience	The tenderer shall provide CVs of the Site Manager with relevant information on levels of experience with Pneumatic,	The Site Manager has more than 5 years' experience with reasonable levels of experience in Pneumatic, hydraulic and special service lubrication systems	5	

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	ation Hydraulics and Special S Station	Services at Matimba Page:	12 of 17		
OWEI	Station		The hydraulic & Pneumatic technician has between 1- and 3-years' experience with reasonable level of pneumatic, lubrication and hydraulic experience required.  No Submission of documentation	2	
			No Submission of documentation	0	
2.4 Lubrication Artisans X 4	Lubrication Artisans X 4	The tenderer shall provide CVs of the four Lubrication Artisans with at least an N3 diploma entry level. With relevant information on levels of experience with Pneumatic, hydraulic and special service lubrication systems	The Lubrication Artisans has greater than 3-years' experience with outstanding levels of general experience, Key staff has extensive level of pneumatic, lubrication and hydraulic experience required.	5	5
			The Lubrication Artisan has between 1- and 2-years' experience with extensive levels of general experience, Key staff Key staff has extensive level of pneumatic, lubrication and hydraulic experience required.	4	
			The Lubrication Artisan has between 0- and 1-years' experience with reasonable level of pneumatic, lubrication and hydraulic experience required.	2	
			No Submission of documentation	0	
2.5	Semi Skilled X 4	The tenderer shall provide CVs of the four Semiskilled with at least a Grade 12 or N2 entry level with relevant information on levels of experience with	The Semiskilled has 1 or more-years' experience with reasonable level of pneumatic, lubrication and hydraulic experience required in a power plant.	5	5
		Pneumatic, hydraulic and special service lubrication systems	The Semiskilled has less than 1-years' experience with little knowledge of pneumatic, lubrication and hydraulic experience required in a power plant.	3	

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			No Submission of documentation	0	-
3	Quality Control Plan	The tenderer shall provide a comprehensive Quality control plan and method statement for the devices	QCP and method statement submitted and technically detailed and aligned.	5	
		indicated on the scope of work	QCP and method statement submitted and technically detailed but not aligning.	2	15
			No QCP or method statement documents submitted	0	
			TOTAL: 100		

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4.5 TET MEMBER RESPONSIBILITIES

**Table 4: TET Member Responsibilities** 

Mandatory Criteria Number	TET 1	TET 2	TET 3
N/A			
Qualitative Criteria Number	TET 1	TET 2	TET 3
1.	X	х	х
2.1	х	х	х
2.2	х	х	х
2.3	Х	х	Х
2.4	X	х	Х
2.5 X		Х	Х

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	3	X	Х	Х

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# 4.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

## 4.6.1 Risks

# **Table 5: Acceptable Technical Risks**

Risk	Description
1.	None

# **Table 6: Unacceptable Technical Risks**

Risk	Description
1.	None

# 4.6.2 Exceptions / Conditions

# **Table 7: Acceptable Technical Exceptions / Conditions**

Risk	Description
1.	None

# **Table 8: Unacceptable Technical Exceptions / Conditions**

Risk	Description
1.	None

0.1

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## 5. AUTHORISATION

This document has been seen and accepted by:

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## 6. REVISIONS

Date	Rev.	Compiler	Remarks
November 2024	1	T Modiba	First Draft

## 7. DEVELOPMENT TEAM

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

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- SJ Manena
- David Du Plessis
- Sello Matlakala

## 8. ACKNOWLEDGEMENTS

Not Applicable