Eskom	Strategy	Engineering

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Compiled by	Functional Responsibility	Authorised by
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TABLES

1. INTRODUCTION

The purpose of this document is to define the technical criteria/requirement for the scope of work to be executed for the maintenance services and repairs of unit 1 to 6 Valves (boiler and turbine), Pipe/heat exchanger flanges as well as HP Heater leak testing and plugging at Matla Power Station and the Technical evaluation strategy to be followed in acquiring such external services

2. SUPPORTING CLAUSES

2.1 SCOPE

High level scope.

The service provider shall perform general valve maintenance on Matla Turbine and Boiler valves and heat exchangers normal maintenance as well as the High-Pressure Heaters The high-level valve type is as follows

- Spring load safety valves
- Globe valve (isolating and regulating type)
- Gate valves (parallel slides gates, wedge gates, knife gates and rubber gates)
- Butterfly valves
- Steam traps and float traps
- Non return valves
- Ball valves
- Heat exchangers
  - Shell in tube leak testing, cleaning, tube plugging and gasket replacement
  - Plate heat exchanger cleaning, removal and leak testing

The scope of work entails the following and it is aimed at the refurbishment of Boiler and Turbine HP valves at Matla Power Station to OEM specifications and commissioning to meet operational requirements

The service provider is to provide the following services on Matla Boiler and Turbine valves

II Repair the valves in response to plant notification system The repairs could be done on load or off-load in accordance with the requirements of the plant safety regulation and maintenance planning.

III The valve repairs entails

- Removal of actuators from valves
- Installation of actuators onto the valves
- Stripping and cleaning of valves and valves components for the purpose of repair or investigation
- Removal of valves (bolted valves) from the plant
- Installation of valves into the plant
- Collection of valves and spares from the stores and from the repairers

- Measuring the valves components dimensions when required and recording the measurements
- Prevention of foreign matter ingress into the system when valves are open.
- Packing, repacking and adjustment of the valve glands
- Assembling of the valves during valves overhaul
- Lapping of valves.
- Reporting of technical findings to the Eskom technical representatives
- Perform planned or scheduled plant walk to inspect the condition of the valves
- Application of onload greasing where required and possible

iv. Inspect the valves for the following defects during maintenance

- Score marks on the spindle, disc and body seats
- Pitting on the spindle discs and body seats.
- Washing of body seats and discs
- Corrosion on plugs, spindle, discs and body seats.
- Bent shaft
- Damaged spindle threads and nuts.
- Clearances on guides and sliding parts
- Damaged stem/disc connector blocks
- Stellite thickness on valves parts where possible.
- Bluing inspection during valve repairs
- Adequacy of grease/lubrication during normal operation.

v. Valves Commissioning

- Measure and record valves mechanical strokes prior to the installation of actuators
- Measure and record valves mechanical strokes with actuators installed.
- Set the valves mechanical limits (close and open) during valves stroking.
- Record the torques (opening and closing torques) or actuated valves

vi Valves quality checking during outages

- Perform valves quality checks during outages
- During outages, raise recommendations to correct quality deviation to the valves system engineer or outage coordinator
- Participate in the stroke checking process for valves during outages.

vii. Valve trouble shooting during normal operations

- Assist operating with first line trouble shooting on valves challenges and defects during operation, plant commissioning, unit light-up and unit shut down
- Assist operating with valves challenges during the isolations and desolations as and when requested
- Install authorised valve gagging and blanking equipment

viii Valve testing

- Assist during the boiler safety valves floating
- Assist during turbine safety valves trevi-testing
- Assist during valves leak tests

ix Valves spares management

- Provide the spares list including consumables for the valves on scheduled maintenance

x Pipes flanged onto heaters/coolers (Heat exchangers)

- Splitting of heaters and coolers connection flanges
- Replacement of coolers and heaters pipe gaskets
- Cleaning of flanges for the replacement of gaskets
- Removal and re-installation of heat exchanger water boxes during plant maintenance
- Leak testing of heat exchangers during plant maintenance
- Plugging of heat exchangers during plant maintenance

2.1.2 Purpose

The purpose of this tender technical evaluation strategy is to define the Mandatory Evaluation Criteria, Qualitative Evaluation Criteria and Technical Evaluation Team member responsibilities for tender technical evaluation The technical evaluation strategy serves as basis for the tender technical evaluation process

2.1.3 Applicability

This document shall apply to Matla Power Station

2.2 NORMATIVE/INFORMATIVE REFERENCES

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

2.2.1 Normative

[1] 240-168966153 Generation Tender Technical Evaluation Procedure

2.2.2 Informative

Not Applicable

2.3 DEFINITIONS

Definition	Description
Refurbishment/Overhaul	The refurbishment or overhaul is the servicing of valves to OEM specification
Tender	A tender refers to a written competitive offer, quotation, proposal made by the supplier in a prescribed or stipulated form in response to an invitation to tender/competitive enquire for provision of assets/goods or services and or the disposal thereof.

2.3.1 Classification

Controlled Disclosure: Controlled Disclosure to external parties (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

Abbreviation	Description
OEM	Original Equipment Manufacturer
TET	Technical Evaluation Team

2.5 ROLES AND RESPONSIBILITIES

As per 240-168966153 Generation Tender Technical Evaluation Procedure for Generation

2.6 PROCESS FOR MONITORING

Not Applicable

2.7 RELATED/SUPPORTING DOCUMENTS

Not Applicable.

3. TENDER TECHNICAL EVALUATION STRATEGY

3.1 TECHNICAL EVALUATION THRESHOLD

The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 70%.

3.2 TET MEMBERS

The TET members will be selected by the accountable manager/delegated authority.

3.3 MANDATORY TECHNICAL EVALUATION CRITERIA

Mandatory requirements			
KPI	**Requirement/Deliverables**	**Score**	
Evidence that the service provider has experience working on high pressure valves	Submit a written declaration (signed or stamped under oath) that high pressure and temperature (>/= 2 MPa & >/=200 °C) valves have been overhauled by the contractor	**Yes/No**	No will imply the automatic disqualification from further evaluation

Table 1: Mandatory Technical Evaluation Criteria

3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

KPI - Criteria Evaluation Indicator	Minimum Criteria Evaluation Requirements	Source	%	Totally deficient or no responsive	Compliant with non-acceptable risks	Compliant with acceptable risks	Fully compliant
Company Capability and experience (30%)	Proof of previous High Pressure Valves Maintenance services Submit purchase order documents or contract evidence document indicating the number of valves serviced or repaired.	Purchase order documents or contracts indicating number of valves repaired or serviced	20%	0 Non-responsive or No evidence	2 Number of valves repaired/ serviced (1-19)	4 Number of valves repaired/ serviced (19-39)	5 Number of valves repaired/ serviced (40 or more)
	Company knowledge on mechanical equipment repairs/services or refurbishment Mechanical Equipment includes the following - Gearboxes - Rotating equipment - Pipe flanges - Heat exchanger - Valves	Purchase order documents indicating the types of mechanical equipment repaired/serviced or refurbished by the supplier	5%	0 Never repaired or refurbished a mechanical equipment	2 Suppliers has worked on only 1 of the mentioned mechanical equipment	4 Suppliers has worked on at least 2- 3 of the mentioned mechanical equipment	5 Suppliers has worked on at least 4 of the mentioned mechanical equipment

KPI - Criteria Evaluation Indicator	Minimum Criteria Evaluation Requirements	Source	%	Totally deficient or no responsive	Compliant with non-acceptable risks	Compliant with acceptable risks	Fully compliant
	Company knowledge and experience on safety valves (any)	Submit purchase order documents of work done on safety valves	5%	**0** Never repaired or refurbished safety valves	**2** Suppliers has worked on 5-6 safety valves	**4** Suppliers has worked on 7-10 safety valves	**5** Suppliers has worked on more than 10 safety valves
Company Technical Resources (Skilled Personnel) **(50 %)**	**Minimum requirements of (1) Site Supervisor(s) must have:** • NQF 4 or N5 Certificate or NDip • Mechanical fitting trade test **Minimum experience of site supervisor** •Minimum of 5 Years Working Experience on (HP Valves)	Submit CV and qualification	10%	**0** NQF Level 4 /N5 Cert/NDip with combined experience (fitter plus supervisory) of **< 5 years or** does not meet minimum requirements	**2** NQF Level 4 /N5 Cert/NDip with combined experience (fitter plus supervisory) of **5< exp < 7 years**	**4** NQF Level 4 /N5 Cert/NDip with combined experience (fitter plus supervisory) of **7< exp < 10 years**	**5** NQF Level 4 /N5 Cert/NDip with combined experience (fitter plus supervisory) of **>/= 10 years**

KPI - Criteria Evaluation Indicator	Minimum Criteria Evaluation Requirements	Source	%	Totally deficient or no responsive	Compliant with non-acceptable risks	Compliant with acceptable risks	Fully compliant
	Minimum of (8) Mechanical Fitter assistance must have: • Matric/N3 equivalent. • Minimum of 2 years experience of working on valves **Or** Demonstrate more than 10 years industrial valve experience without Matric	Submit CVs and qualifications	**20%**	**0** Non responsive or No evidence	**2** Matric/N3 with 2≥3 years of experience	**4** Matric/N3 with 3≥4 years of fitting experience	**5** Matric/N3 with 5≥9years of fitting experience or No metric/No N3 but CV demonstrates more than 10 years industrial valves (specific) experience with verifiable work references
	Minimum of (8) Mechanical fitter must have: - NQF Certificate / N3 qualification and - Mechanical fitting and Turner trade test - Minimum of 3 years of fitter and Turner experience on (HP valve)	Submit CV's and qualifications	**20%**	**0** No trade test evident	**2** NQF Lvl 3 / N3 Cert **3 > 4 years** of fitter and Turner experience on (HP valve) required experience	**4** NQF Lvl 3 / N3 Cert with 4 > 5 years of fitter and Turner experience on (HP valve)	**5** NQF Lvl 4 / N4 Cert with **more than** 5 years of fitter and Turner experience on (HP valve)

KPI - Criteria Evaluation Indicator	Minimum Criteria Evaluation Requirements	Source	%	Totally deficient or no responsive	Compliant with non-acceptable risks	Compliant with acceptable risks	Fully compliant
Execution / Methodology Plan (20%)	Technical Method Statement regarding Refurbishment of HP Valves - Valve Identification & Disassembly - QCP & Ingress Prevention -Typical defects & Repair strategy - Valves Assembly and Function checks -Spares identification & Control	Provide a detailed method statement detailing the sequential methodology of overhauling/refurbishing the valves	**20%**	0 Method statement is totally deficient or not evident	**2** Method statement covers 3 of the methodology for repairing various types of valves.	**4** Method statement covers 4 of the methodology for repairing various types of valves	**5** Method statement fully covers the methodology of repairing various types of valves
TOTAL SCORES FOR TECHNICAL			**100%**				
TAKE NOTE: ONLY TECHNICALLY SUITABLE IF TOTAL SCORE IS > 70 %							

Table 2: Qualitative Technical Evaluation Criteria

3.5 TET MEMBER RESPONSIBILITIES

Table 3: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3	TET 4
3 3 1	X	X	X	X
3 3 2	X	X	X	X
Qualitative Criteria Number	**TET 1**	**TET 2**	**TET 3**	**TET 4**
3 4 1	X	X	X	X
3 4 2	X	X	X	X
3 4 3	X	X	X	X
3 4 4	X	X	X	X

3.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.6.1 Risks

Table 4: Acceptable Technical Risks

Risk	Description
1	N/A

Table 5: Unacceptable Technical Risks

Risk	Description
1	Proof of previous High Pressure Valves Maintenance services
2	Company knowledge on mechanical equipment repairs/services or refurbishment

3.6.2 Exceptions / Conditions

Table 6: Acceptable Technical Exceptions / Conditions

Risk	Description
1	N/A

Table 7: Unacceptable Technical Exceptions / Conditions

Risk	Description
1	N/A

4. AUTHORISATION

This document has been seen and accepted by

Name	Designation	Signature
Thobile Tyeke	Senior Engineer	
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5. REVISIONS

Date	Rev.	Compiler	Remarks
N/A			

6. DEVELOPMENT TEAM

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7. ACKNOWLEDGEMENTS

N/A