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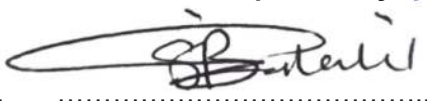


William Malapane

System Engineer - Feedwater

Date: 15 November 2021

Functional Responsibility

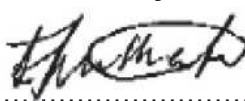


Brenda Sidaki

Turbine Engineering Manager

Date: 15 November 2021

Authorised by



Londi Mthembu

Engineering Manager

Date: 2021/11/23

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1. INTRODUCTION

The purpose of this document is to outline the scope of work that is required to overhaul turbine safety valves at Majuba Power Station and the Technical evaluation strategy to be followed in acquiring such external services. The scope of work also entails the contractor to supply the required soft spares (i.e gasket, pressure seal and packings) during the refurbishment process.

2. SUPPORTING CLAUSES

2.1 SCOPE

The scope of work entails the following aiming at refurbishment of turbine safety valves at Majuba Power Station to OEM specifications and testing to meet operational requirements:

All soft spares will be supplied by the contractor and should be in accordance to the OEM requirements/specification.

- The contractor develops and submits QCP for approval by the end user – System Engineer prior to commence of any activities in the Works Information/Scope of Work issued.
- When submitting the QCP, the following procedures are required based on scope of works and type of safety valve being worked on:
 - Stripping procedure
 - Inspection procedure
 - Repair procedure
 - Assembly procedure
 - Inspection and dimension check sheets
- Visual Inspection (internal and external valve body and components) to be carried out together with Eskom and contractor Quality Inspector. Take photos if necessary. The inspection check sheet/ or report to be completed per valve and shared with the System Engineer for recommendations.
- Valves to be visually inspected or NDT to be done by onsite contractor if necessary. All relevant control sheets must be completed (signed by both Eskom's and Contractor's Quality Inspector).
- Valve spindles to be inspected for scoring, pitting and erosion and surface crack tested (NDT) and conduct dimensional checks. Perform spindle run out test if necessary (report to be available). Spindle seating area to be lapped or if spindle is bent it must be replaced.
- Valve body seat to be inspected for scoring, pitting and erosion and surface crack tested (NDT). Depending on the nature of damage of the valve body seat, if the valve seat cannot be further lapped; replacement of valve seat is a preferred method.

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- All gland retaining studs and nuts to be removed and visually inspected. All studs and nuts to be of same dimension with respect to the valve.
- Valve gland retaining nuts and studs are to be removed and inspected for damage to threads, corrosion and stretching of studs. Replace if damaged or out of specification.
- Studs holes to be inspected for thread damage and repaired as required. All nuts to be free and not seized on studs. When a valve is assembled, ensure that washers or springs are in place and (at least 3-4 threads is exposed on the studs when nuts are tightened).
- Special attention to be paid to gasket sealing areas. Gaskets are to be checked to conform to the recommended material with respect to temperature and pressure rating per valve. Ensure correct gasket dimensions.
- Ensure that the correct spring coupling material and stiffness index is adhered too when replacing the spring.
- Check for any physical damage (cracks, deformation, blockage) on the perforated cages, report to System engineer for recommendation.
- The contractor is to provide secure storage for all valve components. The contractor at his own cost will replace lost components.
- The contractor shall provide a technical report of the inspection findings and repairs conducted on every valve. The report should as a minimum include the following:
 - The initial condition of the valve after stripping – report on debris, wear, and defects noted on the valves and associated components.
 - The repairs/replacements conducted to restore the valves mechanical integrity
 - Measured dimensions vs. allowable tolerances
 - List of recommended actions and/or spares for the next overhaul
 - Photographs of all notable defects
- The following activities are the minimum activities expected to be carried out by the Contractor, the actual list can only be done after inspections. There are other activities that will be done but are depending on the inspection and before doing they must be confirmed with the Project Manager for time and cost.
- No valve or valve component to leave site without the authorization from the Project Co-ordinator, issuing a gate release document.

Completion

In accordance with the Works Information, the works are completed by the Completion Dates as per the latest agreed programme between Employer and Contractor.

Data pack to be provided with electronic copies to the Project Manager, System Engineer and the document centre for storage.

2.1.1 Purpose

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

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2.1.2 Applicability

This document shall apply to Majuba 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] 240-48929482: Tender Technical Evaluation Procedure
- [2] 240-142257054 Technical Evaluation Standard for the Capability Assessment of Service Providers for the Refurbishment of Valves and Fittings in Eskom Coal Fired Power Plants

2.2.2 Informative

- [3] Not Applicable

2.3 DEFINITIONS

2.3.1 Refurbishment/Overhaul: The refurbishment or overhaul is the servicing of valves to OEM specification.

2.3.2 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.

2.3.3 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

Roles are applicable as per 240-48929482: Tender Technical Evaluation Procedure

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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

Table 1: TET Members

TET number	TET Member Name	Designation
TET 1	William Malapane	System Engineer – Feed water
TET 2	Musa Makhoba	System Engineer – Turbine Auxiliaries
TET 3	Menzi Mgenge	System Engineer – Condensate

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3.3 MANADATORY TECHNICAL EVALUATION CRITERIA

Table 2: Mandatory Technical Evaluation Criteria

		Tender Technical Evaluation Strategy for the capability assessment of service providers for the refurbishment of Turbine Safety Valves in Eskom Majuba power station.		
	Section A - MANDATORY TECHNICAL REQUIREMENTS	OBJECTIVE EVIDENCE TO BE PRODUCED	CRITERION ACHIEVED YES/NO	COMMENT / REMARK
1.	Reference list of employers recently where scope was carried out.	The service provider provides demonstrable evidence that the company has been in the valve maintenance, repair, and refurbishment business for a period of not less than 3 years.		Applicable to all service providers
2.	Service provider to provide proof of valve training for staff	The service provider provides demonstrable proof of valve training interventions in the last 3 years for all operations personnel. Tier 1 - Basic training for all personnel. PER and SANS 347 training for senior technical /supervisory personnel - Minimum of one individual. Tier 2 - Intermediate valve training for all personnel. PER and SANS 347 training for senior technical and supervisory personnel - Minimum of 2 individuals. Tier 3 - Advanced OEM valve training for all personnel. PER and SANS 347 training for senior technical and supervisory personnel - Minimum of 2 individuals		Applicable to all service providers
3.				

Table 3: Qualitative Technical Evaluation Criteria

Section B - QUALITATIVE CRITERIA					
KPI - Criteria Evaluation Indicator	Weight (%)	Minimum Criteria Evaluation Requirements	Unit	0 Non-Responsive 0% 2 Non-Compliant 2.87% 4 Compliant with associated qualifications 5.71% 5 Compliant 7.14%	TOTAL RATING
3.3.2.1 Company leadership and accountability	7.14	The service provider to provide an organogram clearly defining the roles and responsibilities in the management hierarchy 0 – If there is no organogram submitted 2 – If organogram is submitted but qualifications not submitted. 4 – If organogram is submitted and 80% qualifications are submitted. 5 - If the organogram is submitted with all the relevant qualifications.	Number	0 2 4 5	
3.3.2.2 Personnel qualifications	7.14	The service provider provides demonstrable evidence of the available human resources (Core team) including qualifications and levels of experience. 0 - Nothing is submitted 2 – No evidence is submitted 4 – 80% evidence is provided with associated qualifications. 5 - All evidence and qualifications are provided.	Number	0 2 4 5	

3.3.2.3 Basic engineering capability, repair and refurbishment control	7.14	The service provider demonstrates capability to overhaul valves and key activities and required tests (e.g. previous work, QCP's). • 0 - No evidence is provided • 2 – No previous work but QCP, s are provided • 4 – More than 5 previous jobs done and detailed QCP's. • 5 - All documents are submitted	Number	0	2	4	5	
3.3.2.4 Equipment and tooling	7.14	The service provider demonstrate compliance to the minimum required equipment and tooling. • 0 – No Tools • 2 – Only sheet with tool list • 4 – 80% equipment is shown (e.g. Lapping tool, slings etc) • 5 – All necessary equipment and tooling is provided	Number	0	2	4	5	
3.3.2.5 Purchasing controls of soft goods and spare parts	7.14	The service provider demonstrates his purchasing controls by providing a copy of the documentation for soft spares. • 0 – No response • 5 – Documents supplied	Number	0	2	4	5	
3.3.2.6 Receiving inspection controls	7.14	The service provider demonstrates his receiving inspection controls by using the arrival of a spare component from the Client/Employer as an example. • 0 – No response • 2 – Only previous records are supplied • 4 – only Procedure is supplied • 5 – Both procedure and previous work records are supplied	Number	0	2	4	5	
3.3.2.7 Handling, storage, preservation of material and components	7.14	The service provider provides a procedure for storing soft goods and allows access to the various storage areas. • 0 – No procedure.	Number	0	2	4	5	

		• 5 – Signed Procedure							
3.3.2.8 Control of inspection, measuring and test equipment	7.14	The service provider provides demonstrable proof for the control of inspections, measurements, and test equipment. • 0 – No proof provided. • 2 – Only procedure provided. • 4 – Previous work measurements and procedure provided. • 5 – Procedure, previous work measurements and test equipment list provided.	Number	0	2	4	5		
3.3.2.9 Inspection and testing during repair and refurbishment	7.14	The service provider provides copies of inspection, test and measurements records • 0 - No documents provided. • 2 – Only one of the three reports provided. • 4 – Two of the three reports provided. • 5 – All three reports are provided.	Number	0	2	4	5		
3.3.2.10 Identification and traceability	7.14	The service provider demonstrates a system that provides a unique identification of individual soft spares, re-usable valve components and new spares. • 0 – No proof provided. • 2 – Only tags provided. • 4 – Only procedure provided. • 5 – Both procedure and tags are demonstrated.	Number	0	2	4	5		
3.3.2.11 Artisan tool kits	7.14	The service provider shall demonstrate that artisan tool boxes are sufficiently equipped for his scope of capability • 0 - No toolbox • 2 – 30% of the tools required for the task • 4 - 70% of the tools required for the task • 5 – 100% of the tools required for the task	Number	0	2	4	5		

3.3.2.12 Basic Valve Training	7.14	The service provider provides demonstrable proof of valve basic training interventions. • 0 – No training at all • 2 – provide training proof older than 10 years • 4 – Provide training no older than 5 years • 5 – Provide training no older than 3 years	Number	0	2	4	5	
3.3.2.13 Advanced OEM training	7.14	The service provider provides demonstrable proof of advanced OEM valve training. • 0 – No proof • 2 – Provide Non-OEM training • 4 – Only less than 50% employees trained • 5 – All relevant staff trained	Number	0	2	4	5	
3.3.2.14 Special processes such as welding	7.14	The service provider provides demonstrable evidence of his ISO 3834-2 certification and a sample datebook for work carried out in the last 3 years. In cases where special processes are outsourced, the service provider provides demonstrable evidence of his outsourcing controls and a copy of the special process service providers' data book. • 0 – No proof • 2 – 1-year proof • 4 – 2 years proof • 5 – 3 or more years proof	Number	0	2	4	5	

3.5 TET MEMBER RESPONSIBILITIES**Table 4: TET Member Responsibilities**

Mandatory Criteria Number	TET 1	TET 2	TET 3
Reference list of employers recently where scope was carried out	X	X	X
Service provider to provide proof of valve training for staff	X	X	X
Qualitative Criteria Number	TET 1	TET 2	TET 3
3.3.2.1 Company leadership and accountability	X	X	X
3.3.2.2 Personnel qualifications	X	X	X
3.3.2.3 Basic engineering capability, repair, and refurbishment control	X	X	X
3.3.2.4 Equipment and tooling	X	X	X
3.3.2.5 Purchasing controls of soft goods and spare parts	X	X	X
3.3.2.6 Receiving inspection controls	X	X	X
3.3.2.7 Handling, storage, preservation of material and components	X	X	X
3.3.2.8 Control of inspection, measuring and test equipment	X	X	X
3.3.2.9 Inspection and testing during repair and refurbishment	X	X	X
3.3.2.10 Identification and traceability	X	X	X
3.3.2.11 Artisan tool kits	X	X	X
3.3.2.12 Basic Valve Training	X	X	X
3.3.2.13 Advanced OEM training	X	X	X
3.3.2.14 Special processes such as welding	X	X	X

3.6.1 Risks

Table 5: Acceptable Technical Risks

Risk	Description
1.	Inadequate or less than required number of core team.

Table 6: Unacceptable Technical Risks

Risk	Description
1.	Unavailable proof of personnel qualification

3.6.2 Exceptions / Conditions

Table 7: Acceptable Technical Exceptions / Conditions

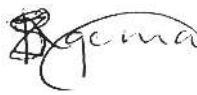
Risk	Description
1.	None

Table 8: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	None

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation	Signature
Zamile Ngema	System Engineer, Turbine Auxiliaries	
Benna Groenewald	Outage Coordinator, Condensate and Feedwater	
Clara Losaba	Manager, Projects	

5. REVISIONS

Date	Rev.	Compiler	Remarks
October 2021	1	William Malapane	First Draft

6. DEVELOPMENT TEAM

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

- See section 4 above

7. ACKNOWLEDGEMENTS

- Bilal Cassim
- Siphon Masondo
- Trishka Munilal

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