

Title: **Tender Technical Evaluation Strategy for Tutuka SSC Mechanical and Machined spares**

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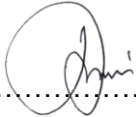
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1. INTRODUCTION

Tutuka Power Station units consist of a boiler set that is fitted with a Submerged Scraper Chain Conveyor (SSC) system underneath the boiler for Boiler Bottom Ash (BBA) removal. Each boiler unit has one SSC. BBA removed by the SSC is discharged onto the short coarse ash conveyors (CAC) via a discharge grizzly assembly. The short coarse ash conveyor is linked to other ash conveyors to eventually feed the discarded ash to the ash disposal facility (Ash dump).

The SSC consists of the chain; scraper bars (flights), main drive system, tensioning system, idler wheels, stub shafts (submerged idler wheels), ash box, etc. The ash box has the horizontal section directly underneath the boiler nose, as well as the sloped section that guides the ash up to the exit onto the grizzly grating and short coarse conveyor. The purpose of the sloped section (dewatering slope) is to allow the water to drain as much as possible from the ash as it ascends the slope to the exit point.

The ash box is the main container of the falling coarse ash from the boiler. In operation the ash box is filled with water that is high enough to reach the bottom of the boiler structure (dipper plates) to provide the seal to the boiler and prevent air ingress at the bottom of the boiler. The scrapers guided by the two chains enters the inside of the ash box (upper trough) at the rear, scraps and push the ash at the bottom of the ash box through to the dewatering slope until the ash falls over onto the grizzly gratings and the short coarse conveyor. The scrapers bars still guided by the chain, proceed to travel underneath the ash box upper trough in the return tray / lower trough back to the rear side where they will re-enter the ash box upper trough.

This strategy serves as the Technical Evaluation Strategy for the procurement of mechanical and machined SSC spare components to ensure technical requirements are met.

2. SUPPORTING CLAUSES

2.1 SCOPE

The scope is for the supply and delivery of machined and mechanical spare components as per the list below:

Description	Technical Description (Long Text)	Type/System	Stock No.
SSC main drive shaft	SHAFT: LENGTH: 2700 MM; MATERIAL: EN8; APPLICATION: SSC MAIN DRIVE; END STYLE 1: 36MM KEYWAY; END STYLE 2: 36MM KEYWAY; END SIZE DAIMETER: 125 MM; 2 SECTION DAIMETER 140mm with 2x KEYWAYS: MIDDLE SECTION DAIMETER 150MM; MATERIAL SPECIFICATIONS TO SUPPLIED VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER drawing number 6045s2	Machining	0687285
L&R 3 and 4 Wheels	Radius: 473mm, PCD 495, Thickness:105mm Material: EN8 MATERIAL SPECIFICATIONS TO SUPPLIED VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER 6037s2	Machining	687239

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L&R 3 and 4 Shaft and wheel assembly	SHAFT: LENGTH 2316 MM; MATERIAL EN8; APPLICATION: SSC RETURN IDLER: NO KEY; MATERIAL SPECIFICATIONS TO SUPPLIED VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER 6037	Machining	687266
SSC Tear drop liners L&R2	Thickness: 80 mm Material: VR 500 MATERIAL SPECIFICATIONS TO SUPPLIED VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER 57228r0	Machining	687200
SSC tensioner block rail	KEY STOCK: WIDTH: 28 MM LENGTH: 3 M PROCESS: HOT ROLLED THICKNESS: 50 MM MATERIAL: STL FLAT BAR VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER	Machining	162097
SSC Tensioner wheels	IDLER, SPROCKET DIAMETER 480 MM, EN 8, CHAIN TENSION L/R5, TENSION CHAIN GUIDE WHEELS, 180MMto 150MM HOLE IN CENTRE, 8x HOLES FOR M10 BOLTS, NO KEYWAY, DATE OF MANUFACTURING MUST BE STAMPED, IN ACCORDANCE WITH THE LATEST EDITION OF SA NS 1313, ALL IDLERS MUST BE SABS APPROVED WITH SABS MARK VISIBLE ON ALL IDLERS, APPROVED MATERIAL CERTIFICATE TO BE INCLUDED WITH EVERY DELIVERY, VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER Drawing 57231s3 rev 3 ITEM 2	Machining	38841
SSC Tensioner Block	BLOCK LENGTH 245 MM THICKNESS 140mm, MATERIAL STL, CHAIN TENSION L/R5, TENSION CHAIN GUIDE WITH WEAR LINER BOLTED DATE OF MANUFACTURING MUST BE STAMPED, IN ACCORDANCE WITH THE LATEST EDITION OF SA NS 1313, ALL BLOCKS MUST BE SABS APPROVED WITH SABS MARK VISIBLE VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER Drawing 57231s2r0	Machining	688539
SSC Tensioner shaft	SHAFT: LENGTH: 338,5 MM; MATERIAL: EN8; APPLICATION: SSC TENSIONER; GROOVE TO BE MACHINED, and M12 DRILLED AND TAPPED HOLES ON THE OTHER SIDE VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER Drawing 57231s3 rev 3 ITEM 1	Machining	687265
Tensioner wheel covers, keeper plates and bolts	MATERIAL: EN 10025-2; APPLICATION: SSC TENSIONER WHEEL RESTRAINERS; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER Drawing 57231s3 rev 3 ITEM 3,4,5 and 6	Machining	687204
SSC VRN 500 liners	SPARES FOR WET ASH SCRAPER CONVEYOR FLIGHT BAR WEAR PLATES 80 X 10, 1720 MM LONG * MATERIAL: V.R.N. 500	Machining	162433
SSC VRN 600 liners	SPARES FOR WET ASH SCRAPER CONVEYOR F WEAR PLATES 120 X 12, 1760 MM LONG * MATERIAL: V.R.N. 600	Machining	

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Coupling guard (repairable)	HOUSING: TYPE: COUPLING DIMENSIONS: DIA 365 MM MATERIAL: AL COVER SUB ASSY, HORIZONTAL SPLIT PART NO: FALK-150T1	Machining	25573
Grizzly NDE shaft	SHAFT: TYPE: NON DRIVE END; LENGTH: 1.544 M; MATERIAL: EN8; APPLICATION: GRIZZLY SCRAPER CONVEYOR; END STYLE 1: PLAIN; END STYLE 2: PLAIN; END 1 SIZE: 75 MM; END 2 SIZE: 80 MM; B SIDE ON DRAWING - KEY WAY TO BE MACHINED 180 DEG FROM EACH OTHER AND ON THE SAME CENTER LINE; MATERIAL CERTIFICATION TO BE PROVIDED VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER.	Machining	255326
Grizzly DE shaft	SHAFT: TYPE: DRIVE END; LENGTH: 1.615 M; MATERIAL: EN8; APPLICATION: GRIZZLY SCRAPER CONVEYOR; END STYLE 1: KEYED; END STYLE 2: PLAIN; END 1 SIZE: 190 MM; END 2 SIZE: 80 MM; B SIDE ON DRAWING KEYWAY TO BE MACHINED 180 DEG FROM EACH OTHER AND ON THE SAME CENTER LINE; MATERIAL CERTIFICATION TO BE PROVIDED VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER.	Machining	255325
Valve gate	VALVE, GATE: VALVE SIZE: 250 MM DESIGN RATING: 16 BAR CONNECTION: FLANGE BODY MATERIAL: SGI TRIM: GATE SGI NITRILE COATED SPINDLE SS SOFTGOODS: SEAL RESILIENT STEM DESIGN: RISING STYLE: BONNET BOLTED TEMPERATURE RATING: 90 DEG C OPERATED: HANDWHEEL SPECIFICATION: SABS664 CL16 SOFTGOODS PACKING DRILLED TO BS4504 TABLE 10 FUSION BONDED EPOXY COATED AND BEARING THE SABS MARK OF APPROVAL DRAWING NO: AINSWORTH-2874 DRAWING NO: AINSWORTH 2874	Mechanical	69935

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.

2.1.2 Applicability

This document applies to Tutuka 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] 240-106628253: Standard for Welding Requirements on Eskom Plant
- [3] 32-1034: Eskom Procurement and Supply Chain Management Procedure
- [4] 32-1033: Eskom's Procurement and Supply Chain Management Policy

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- [5] 240-53114186: Document and Records Management
- [6] 240-53665024: Engineering Quality Manual
- [7] ISO 9001: Quality Management Systems.

2.2.2 Informative

- [1] SANS 10108: The classification of hazardous locations and the selection of apparatus for use in such locations
- [2] OHSA: Occupational Health and Safety Act 85 of 1983
- [3] 15 ENG 0903: Tutuka Power Station Outage Philosophy
- [4] Occupational Health and Safety Act, 1993 (No 85 of 1993): OHS Act, Regulation and code
- [5] QM58: Eskom's Quality Requirements

2.3 DEFINITIONS

None

2.3.1 Classification

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

2.4 ABBREVIATIONS

Abbreviation	Description
ISO	International Standards Organization
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
SA	South Africa
SANS	South African National Standards
TET	Technical Evaluation Team
WPS	Welding Procedure Specification
SSC	Submerged scrapper conveyor
RFP	Request for proposal
RFQ	Request for Quotation
TET	Technical Evaluation Team
SOW	Scope of Work
BBA	Boiler Bottom Ash
ID	Inside diameter
ISO	International Organization for Standardization
ITP	Inspection and Test Plan
m/s	Meters per second
QCP	Quality Control Procedure
WPS	Welding Procedure Specification

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2.5 ROLES AND RESPONSIBILITIES

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

All personnel on the technical tender evaluation team must be familiar with this document before the tender evaluation can proceed.

Technical tender evaluation team must approve this document before the tender evaluation can proceed.

There shall at least be **three evaluation team members to meet a quorum** to be present in the scheduled meeting(s) to approve the evaluation criteria and to evaluate the tender documents.

2.6 PROCESS FOR MONITORING

None.

2.7 RELATED/SUPPORTING DOCUMENTS

240-168966153: Generation Tender Technical Evaluation Procedure.

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%.

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3.2 TET MEMBERS

Table 1: TET Members

TET Number	Evaluator's name	Designation
TET 1		System Engineer
TET 2		SSC Senior Supervisor
TET 3		QC Technician Supervisor

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3.3 MANDATORY TECHNICAL EVALUATION CRITERIA

Table 2: Mandatory Technical Evaluation Criteria

In the table below is a guide on how to score each technical tender returnable. This guide is obtained for the Tender Engineering Evaluation Procedure. There is no mandatory criterion for this contract. Contractors must obtain a minimum of 70% to qualify for further evaluation.

	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Motivation for use of Criteria
	None		

Table 3: Quantitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
1.	Verifiable reference that the Manufacture/Supplier has successfully machined similar equipment to Power Stations/ similar industries in the last 10 years.	<p><u>Returnable</u>: Provide a list contract/purchase order of similar equipment completed by the company/supplier within the last 10 years. References shall include the customer’s name, customer reference person with contact details, project scope and order number.</p> <ul style="list-style-type: none"> • 100% (5) List with 3 or more of purchase orders in the last 10 years • 80% (4) List with 2 purchase orders in the last 10 years • 40% (2) List with 1 purchase order in the last 10 years • 0% (0): No list 	20	

2.	Machine shop technical specification	<p><u>Returnable</u>: Provide technical specification of machine shop of the manufacture/supplier. The machine shop should be capable of machining shaft components of up to 2000mm in length and 300mm diameter.</p> <ul style="list-style-type: none"> • 100% (5) Technical specification submitted indicates that the machine shop is capable of machining shaft components of up to 2000mm in length and 300mm diameter • 0% (0): Technical specification submitted does not indicate that the machine shop is capable of machining shaft components of up to 2000mm in length and 300mm diameter/ Not submitted 	20	-
3.	QCP and procedures	<p><u>Returnable</u>: Examples of completed QCP and supporting work instruction (procedure) used for machining of shafts Client must have signed on for approval of QCP.</p> <ul style="list-style-type: none"> • 100% (5): Submitted QCP and work instruction correct. • 80% (4): Submitted QCP and work instruction satisfactory • 0% (0): Submitted QCP and work instruction not correct/unacceptable/ Not submitted 	20	-
4.	Lead times	<p><u>Returnable</u>: Supplier/Manufacturer to supply the lead times as per the spares detailed in section 2.1 Scope</p>	10	-

		<ul style="list-style-type: none"> • 100% (5): Lead time ≤ 16 weeks • 80% (4): Lead time > 16 weeks & ≤ 32 weeks • 40% (2): Lead time > 32 weeks • 0% (0): No lead time given 		
5.	Data sheet or data book	<p><u>Returnable:</u> Data sheet or data book for all the spares listed in section 2.1</p> <ul style="list-style-type: none"> • 100% (5): Data sheet or data book with material and all other relevant certificates for each spare. • 0% (0): No data sheet or data book/ Incomplete 	20	
6.	Proof that the Equipment spare parts are machined locally, and the mechanical parts received are from the OEMs	<p><u>Returnable:</u> Provide proof of that the equipment spare parts are machined locally, and the mechanical parts are received from the OEMs</p> <ul style="list-style-type: none"> • 100% (5): Submitted proof shows that local machining of machined parts and a valid OEM authorised distributor letter for mechanical parts. • 0% (0): No proof submitted/Incomplete 	10	
			TOTAL: 100	

3.4 TET MEMBER RESPONSIBILITIES

Table 4: TET Member Responsibilities

Qualitative Criteria Number	TET 1	TET 2	TET 3
1	x	x	x
2	x	x	x
3	x	x	x
4	x	x	x
5	x	x	x
6	x	x	x

3.5 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.5.1 Risks

Table 5: Acceptable Technical Risks

Risk	Description
1.	None

Table 6: Unacceptable Technical Risks

Risk	Description
1	Supplier/Manufacturer not supplying data book and lead times as per the spares detailed in section 2.1.

3.5.2 Exceptions / Conditions

Table 7: Acceptable Technical Exceptions / Conditions

Risk	Description
1.	None.

Table 8: Unacceptable Technical Exceptions / Conditions

Risk	Description
1	Examples of completed QCP and supporting work instruction (procedure) used for machining of shafts Client must have signed on for approval of QCP.

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation
	Boiler Engineering Manager
	MMD Line Manager
	SSC System Engineer
	MMD Senior Supervisor
	Quality Control Technician
	System Engineer
	System Engineer

5. REVISIONS

Date	Rev.	Compiler	Remarks
January 2021	1		New Document
July 2023	2		Changed the scope and technical evaluation criteria.

6. DEVELOPMENT TEAM

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

7. ACKNOWLEDGEMENTS

None.

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