Eskom	Tutuka Power Station Strategy	Engineering

Title: **Tender Technical Evaluation Strategy for Tutuka SSC Rotating spares**

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	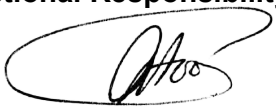	
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1. INTRODUCTION

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 up 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 to capacity 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 scrappers 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 were 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 description of the scope of this Works is as follows:

The scope of work entails the supply and delivery of SSC rotating components spares as per the list below.

Description	Technical Description (Long Text)	OEM Supplier	Type/ System

SSC Main drive Shaft Blumber block	BEARING, PILLOW BLOCK: ROLLING ELEMENT: SPHERICAL BLOCK SIZE: WD 235 X LG 550 X HT 350 MM SHAFT HEIGHT: 170 MM BOLT MOUNTING: 2 BOLT DIAMETER: 35 MM INSIDE DIAMETER: 202 MM HOUSING MATERIAL: CI COMPLETE WITH DOUBLE LIP SEALS DUTY: HEAVY PART NO: SNH532TG VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER IF APPLICABLE	SKF / TIMKEN / FAG	Rotating
SSC Main drive Bearing adapter sleeve	Adapter sleeves for metric shafts BEARING H3128 SKF DATA PACK SLEEVE, ADAPTOR: TYPE: BEARING SHAFT SIZE: 125 MM LENGTH: 96 MM MATERIAL: STL SUPPLIER NOTE - THE ITEM MUST BE ORIGINAL PROTECTIVE PACKED AND MARKED SIZE 145MM OD	SKF / TIMKEN / FAG	Rotating
SSC Main drive bearings	BEARING, ROLLER: TYPE: SELF ALIGNING ROW: DOUBLE INSIDE DIAMETER: 140 MM OUTSIDE DIAMETER: 250 MM WIDTH: 68 MM PART NO: 22228CCKW33 SKF	SKF / TIMKEN / FAG	Rotating
SSC Return Idler (L&R 3 and 4) oil Seals	"SEAL, OIL: INSIDE DIAMETER: 75 MM OUTSIDE DIAMETER: 95 MM WIDTH: 10 MM MATERIAL: RUBBER SYNTHETIC SEALING MEMBER: SINGLE LIP SPRING LOADED: YES WITH SPRING MOULDED-IN REINFORCEMENT PART NO: CB759510 VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER." IF APPLICABLE	SKF / TIMCAN / FAG	Rotating
SSC Return idler shaft adopter sleeve	Adapter sleeves for metric shafts BEARING H2319 SKF DATA PACK SLEEVE, ADAPTOR: TYPE: BEARING SHAFT SIZE: 87 MM LENGTH: 90 MM MATERIAL: STL COMPLETE WITH LOCK NUT KM19 AND LOCKING DEVICE MB19 SIZE 100MM OD	SKF / TIMCAN / FAG	Rotating
SSC Return Idler (L&R 3 and 4) shaft Blumber block	BLOCK,PILLOW:85 MM BORE,CAST IRON HOUSING, BEARING UNIT: TYPE: PILLOW BORE: ID 85 MM MATERIAL: CI SPECIAL MANUFACTURED WITH LOCATING RINGS, FRW 12, 5-170, END COVER-ASNH 519, FOR USE ON SSC RETURN SHAFT L/R 3 AND 4 PART NO: SSN HD 222519 SP	SKF / TIMCAN / FAG	Rotating
SSC L&R 3and4 Bearing adapter sleeve	Adapter sleeves for metric shafts BEARING H319 SKF DATA PACK SLEEVE, SHAFT: TYPE: TAPER INSIDE DIAMETER: 85 MM OUTSIDE DIAMETER: 92 MM LENGTH: 68 MM MATERIAL: STL COMPLETE WITH LOCK WASHER AND NUT, FOR USE ON SSC	SKF / TIMKEN / FAG	Rotating
L&R 3 and 4 Bearing	BEARING,ROLLER:SPHERICAL,C3,92 MM ID	SKF / TIMKEN / FAG	Rotating

SSC Stub shafts, submerged idler unit	IDLER: DIMENSIONS: Guide wheel DIA 413M X LG 547MM; MATERIAL: STL; SSC WET; DRAWING NO: TUT71215-1; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	Rula, SKF	Rotating
SSC Tensioner wheel seal	SEAL, OIL: TYPE: ENCASED INSIDE DIAMETER: 105 MM OUTSIDE DIAMETER: 130 MM WIDTH: 10 MM MATERIAL: RUBBER SYNTHETIC SEALING MEMBER: SINGLE LIP SPRING LOADED: YES WITH SPRING MOULDED IN REINFORCEMENT	SKF/ZOUS	Rotating
SSC Tensioner wheel bearings	BEARING, ROLLER: TYPE: CONE/CUP TAPER ROW: SINGLE INSIDE DIAMETER: 85 MM OUTSIDE DIAMETER: 180 MM WIDTH: 45 MM PART NO: SKF 31317	SKF/TIMKEN/FAG	Rotating
Grizzly speed Variator	1117B - 202 - 9, SERIAL NR487721 DEVICE: HYDROSTATIC SPEED VARIATOR GRIZZLY CONVEYOR PART NO: 1117B-202-9	(BTS,Sky Enterprise, Ratamang)	Rotating
Grizzly gearbox	Type: RDC33 BNN69.917 : 1 GEARBOX: TYPE: REDUCTION RATIO: 71:1 SPEED: 500/1502 RPM	(David Brown, Ratamang)	Rotating
Grizzly bearing	BEARING, ASSEMBLY: TYPE: ROLLER INSIDE DIAMETER: 75 MM OUTSIDE DIAMETER: 130 MM WIDTH: 52 MM SPHERICAL SELF ALIGNING, DOUBLE ROW, LINK BELT, EXTENDED CONE, COMPLETE WITH: TWO OIL SEALS, ONE STEEL LOCK NUT, TWO STEEL GRUB SCREWS SIZE M10, FOR USE ON GRIZZLY CHAIN CONVEYOR TAKEUP/HEADSHAFT PART NO: 13 224 ML 75	SKF/TIMKEN/FAG/Rexroth	Rotating
Grizzly coupling	SPIDER, COUPLING: COUPLING TYPE: FLEXIBLE MATERIAL: NYLON INSIDE DIAMETER: 45 MM APPLICATION: ROTEX HORISONTALLY THICKNESS: 20 MM OUTSIDE DIAMETER: 95 MM SIZE 42 SPIDER,NYLON ROTEX M42		Rotating
Grizzly coupling hub	COUPLING, SHAFT HALF: OUTSIDE DIAMETER: 360 MM LENGTH: 180 MM MATERIAL: STL COMPLETE FALK COUPLING, TORQUE RATEING: 3500 LB/IN, 4500 RPM, WITH HORIZONTAL SPLIT COVER UNBORED PART NO: 1050T10		Rotating
Grizzly plummer block drive end and bearing	HOUSING, BEARING UNIT: TYPE: PLUMBER BLOCK MATERIAL: CI SIZE 75MM SHAFT, FOR LINK BELT, PCD: 190.5MM, OD 222.2MM PART NO: BLOCK:FCB224M75.H,GRIZZLY,75 MM SHAFT	SKF/TIMKEN/FAG/Rexroth / BTS	Rotating

Grizzly plummer block non drive end and bearing	BLOCK:TB22448.H,GRIZZLY,75 MM SHAFT BLOCK: TYPE: TENTION LENGTH: 227 MM MATERIAL: CI FOR LINK BELT, OD 169.9MM, ADJUSTABLE BOLT: 1-5/8 IN BSW SIZE: 75MM SHAFT PART NO: TB22448.H	SKF/TIMKEN/FAG/Rexroth / BTS	Rotating
Grizzly coupling	COUPLING, SHAFT HALF: OUTSIDE DIAMETER: 360 MM LENGTH: 180 MM MATERIAL: STL COMPLETE FALK COUPLING, TORQUE RATEING: 3500 LB/IN, 4500 RPM, WITH HORIZONTAL SPLIT COVER UNBORED PART NO: 1050T10 COUPLING,FALK 1050T10 COMPLETE BATEMAN		Rotating
Degritting sump agitator impeller	AGITATOR; TYPE ASH SUMP, APPLICATION ASH PLANT, IMPELLER TYPE: HA720F, BLADES: BOLTED, HUB: WELDED, STABILIZERS: YES, IMPELLER COATI NG: SNR, KW RATING: 13.50 KW, OUTPUT SPEED: 77 RPM, SERVICE FACTOR: 6.14, CONTRACT NUMBER: C19430/00, DRAWING NO: 09E6413/01 REV 0, MODEL NUMBER: 1088		Rotating
Degritting sump agitator gear box	GEARBOX; TYPE AGITATOR, RATIO 4:1, SPEED 77 RPM, POWER 2.2 KW, SHAFT SIZE 89 MM, APPLICATION DEGRITTING SUMP, ROTATION DIRECTION CLO CKWISE, CONTRACT NUMBER: C19430/00, DRAWING NO: 09E6413/01 REV 0, MODEL NUMBER: 1088		Rotating

2.2

2.2 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. This document will also provide a guideline as to what technical tender returnables are expected and how to asses each tender returnable by providing acceptable and unacceptable criteria's.

2.3 APPLICABILITY

This document is applicable to the Tender Evaluation Team for Tender Technical Evaluation Strategy for the supply of SSC mechanical and Machined spares.

2.4 NORMATIVE/INFORMATIVE REFERENCES

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

Normative

[1] ISO 9001 Quality Management Systems.

[2] 240-48929482: Tender Technical Evaluation Procedure

[3] 240-53716712: Tender Technical Evaluation Results Form Template

[4] 240-53716726: Tender Technical Evaluation Scoring Form Template

[5] 240-53114186: Document and Records Management

[6] 240-53665024: Engineering Quality Manual

[7] 15ENG BLR-032: Maintenance Execution Strategy for SSC, Grizzly and sumps

Informative

[8] NEC document for Supply, Supply and Delivery of SSC Mechanical and Machine spares at Tutuka Power Station .

[9] OHSA: Occupational Health and Safety Act 85 of 1983

[10] 240-106628253 Standard for Welding Requirements on Eskom Plant

[11] Occupational Health and Safety Act, 1993 (No 85 of 1993): OHS Act, Regulation and code

[12] QM58: Eskom's Quality Requirements

2.5 DEFINITIONS

Definition	Description

Classification

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

2.6 ABBREVIATIONS

Table 1: Abbreviations

Abbreviation & Acronyms	Description
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
OEM	Original Equipment Manufacturer

Abbreviation & Acronyms	Description
OHS	Occupational Health and Safety
SANS	South African National Standards
SSC	Submerged Scraper Chain Conveyor
QCP	Quality Control Procedure
WPS	Welding Procedure Specification

2.7 ROLES AND RESPONSIBILITIES

As per 240-48929482: Tender Technical Evaluation Procedure

2.8 PROCESS FOR MONITORING

As per 240-48929482: Tender Technical Evaluation Procedure

2.9 RELATED/SUPPORTING DOCUMENTS

240-48929482, Tender Engineering Evaluation Procedure

2.10 PREREQUISITES

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.

2.11 PRECAUTIONS AND LIMITATIONS

N/A

3. TENDER TECHNCIAL EVALUTION STRATEGY

A weighted scorecard approach is used to evaluate the technical compliance of the tenders against the specifications or ability to perform the work. Tenderers need to have a minimum weighted score of 70% overall or more to technically qualify for further evaluation.

3.1 TECHNICAL TENDER EVALUATION METHOD

Table 1: Evaluation Criteria

Gatekeepers		
No.	**Mandatory Technical Criteria Description**	
1.1	Provide verifiable reference that the Manufacture/Supplier has successfully completed/supplied similar equipment to Power Stations/ similar industries in the last 10 years. References shall include the customer name, customer reference person with contact details, project scope.	
NB: Tenders, which do not satisfy these gatekeepers, will not be given further consideration.		
Technical Evaluation Criteria		**Weighting [%]**
2.1	Supplier/Manufacturer to supply the price schedule and lead times as per the spares detailed in section 2.1 Scope	**50**
2.2	Provide proof of that the Equipment spare parts are procured or received from the OEMs e.g Official Authorized Distributor letter from OEM	**40**
2.3	Certified copy of a valid company accredited ISO9001:2015 certificate or certificate from the OEM of which the supplier has an authorized distribution letter from. Certification must not be older than 3 months from date of submission	**10**
TOTAL		**100%**

NB: A minimum total of 70 % is required in this section for further consideration. The tenderer is to ensure that all the evaluation criteria are submitted as stated with the tender application.

3.2 SCORING TABLE

Table 2: Qualitative Evaluation Criteria Scoring Table

Score	Points	Definition
5	100	**COMPLIANT** Meet technical requirement(s) AND; No foreseen technical risk(s) in meeting technical requirements.

4	80	**COMPLIANT WITH ASSOCIATED QUALIFICATIONS** Meet technical requirement(s) with; Acceptable technical risk(s) AND/OR; Acceptable exceptions AND/OR; Acceptable conditions.
2	40	**NON-COMPLIANT** Does not meet technical requirement(s) AND/OR; Unacceptable technical risk(s) AND/OR; Unacceptable exceptions AND/OR; Unacceptable conditions. Omission of the SOW
0	0	**TOTALLY DEFICIENT OR NON-RESPONSIVE**
Note 1: The scoring table does not allow for scoring of 1 and 3.		

3.3 TECHNICAL EVALUATION THRESHOLD

The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is **70%.** Tenderers need to have a minimum weighted score of 70% overall or more to technically qualify for further evaluation.

3.4 TECHNICAL EVALUATION TEAM

The following personnel will form part of the technical evaluation team:

Table 3: TET

TET Number	Evaluator's name	Designation
TET 1	Tebogo Motloutsi	SSC System Engineer
TET 2	Ntsizwa Mabena	SSC Senior Supervisor
TET 3	Paul Muller	QC Technician Supervisor

3.5 TECHNICAL EVALUATION TEAM RESPONSIBILITIES

Table 4: Evaluation Matrix

Section	TET 1	TET 2	TET 3
1.1	x	x	x
2.1	x	x	x
2.2	x	x	x
2.3	x	x	x

3.6 TECHNICAL EVALUATION SCORING GUIDE

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.

Table 5: Scoring guide

GATEKEEPERS		
Section	**Criteria**	**Yes / No**
1.1.	Provide verifiable reference that the Manufacture/Supplier has successfully supplied similar equipment to Power Stations/ similar industries in the last 10 years. References shall include the customer name, customer reference person with contact details, project scope.	

Technical evaluation						
NB: Tenders which do not satisfy this gatekeeper will not be given further consideration on this project. Contractors who qualify the gatekeeper must obtain a minimum of 70% on the quantitative evaluation to qualify.						
Minimum score of 70% required			**Score**			
No	**Criteria**	**Weight [%]**	**0**	**2**	**4**	**5**
2.1	Supplier/Manufacturer to supply the price schedule and lead times as per the spares detailed in section 2.1 Scope	50	Deficient or non-responsive	Unacceptable risks	Acceptable risks	Fully compliant and no technical risks
2.2	Provide proof of that the Equipment spare parts are procured or received from the OEMs e.g Official Authorized Distributor letter from OEM	40	Deficient or non-responsive	Unacceptable risks	Acceptable risks	Fully compliant and no technical risks
2.3	Certified copy of a valid company accredited ISO9001:2015 certificate. Certification must not be older than 3 months from date of submission	10	Deficient or non-responsive	Unacceptable risks	Acceptable risks	Fully compliant and no technical risks

A. FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

Risks

Table 6: Acceptable Technical Risks

Risk	Description
1.	None

Table 7: Unacceptable Technical Risks

Risk	Description
1.	No proof that the Equipment spare parts will be procured or received from the OEMs e.g. Official Authorized Distributor letter from OEM

Exceptions / Conditions

Table 8: Acceptable Technical Exceptions / Conditions

Risk	Description
1.	None

Table10: Unacceptable Technical Exceptions / Conditions

Risk	Description
1	None

2. AUTHORISATION

This document has been seen and accepted by

Name	Designation
Phil Hoop	Boiler Engineering Manager
Mikateko Matlole	MMD Line Manager
Tebogo Motloutsi	SSC System Engineer
Ntsizwa Mabena	MMD Senior Supervisor
Paul Muller	Quality Control Technician

3. REVISIONS

Date	Rev.	Compiler	Remarks
January 2021	1	Tebogo Motloutsi	New Document

4. DEVELOPMENT TEAM

Ntsizwa Mabena

Paul Muller

5. ACKNOWLEDGEMENTS