Eskom	Strategy	Tutuka Power Station Engineering

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1. INTRODUCTION

2. SUPPORTING CLAUSES

Eskom Tutuka Power Station is using ion exchange resins to polish the water on the steam cycle at the units via the Condensate Polishing plant whereby each unit have 3 CPP's available. Condensate Polishing systems are based on ion exchange (IX) technology. Ion exchange is a reversible interchange of ions between a resin (ion exchange material) and a liquid in which there is no permanent change in the structure of the resin. An ion is an atom or group of atoms with an electric charge. Positive-charged ions are called Cations and are usually metals. Negative-charged ions are called Anions and are usually non-metals.

The impurity ions (positive and/or negative-charged) are taken up by the resin, which must be periodically regenerated to restore it to the original ionic form and depending on the application, there are two types of regeneration method, namely internal and external.

Condensate polishing plants are used for the purification of condensate in a steam cycle in coal fired and natural gas cogeneration plants that are using steam to drive the turbines that run the electric generators. When steam is passed through a series of turbines, expending most of its energy and condensed by heat exchanger system the condensate is treated by condensate polishing system then returned to the boiler where it is converted back into steam.

Condensate polishing system is a unique application of ion exchange resin that removes all soluble impurities created and protects the high-pressure boiler. The condensate polishing system needs to be regenerated from time to time to ensure the ion exchange resins are able to continue to capture soluble impurities and depending on the application, there are two types of regeneration method, namely internal and external. Internal regeneration is referred to when regenerate the resins takes place within the vessel and external regeneration, which is more complicated, is referred to when regeneration takes place outside of vessel used for purification where the resin is transferred to a regeneration vessel, regenerated and then returned to the operating vessel.

2.1 SCOPE

The scope is for the supply and delivery of ion exchange cation and anion resin for the water treatment plant.

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 to evaluate all tenders received from the Service Provider(s) in response to the Enquiry

2.1.2 Applicability

This document is applicable to all appointed and involved in the technical tender evaluation of tenders received from the Service Provider(s) in response to conduct the supply and delivery of ion exchange cation and anion resin For the water treatment plant at Tutuka Power Station.

2.1.3 Effective Date

When the document is authorised.

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] 240-53716726 Technical Scoring Form;

[3] 240-53716712 Technical Evaluation Results;

[4] 240-48929482: Tender Technical Evaluation Procedure;

[5] 32-1034 Eskom Procurement Policy;

[6] Occupational Health and Safety Act No. 85 of 1993

[7] ISO 9001 Quality Management Systems

2.2.2 Informative

[1] Resin management standard

2.3 DEFINITIONS

Definition	Description
Employer	Tutuka Power Station
Principal Contractor	a. As per OHS Act (85/1993)

2.3.1 Classification

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

2.4 ABBREVIATIONS

Abbreviation	Description
OHS	Occupational Health and Safety
P&ID	Piping and Instrumentation Diagram
PS	Power Station
QCP	Quality Control Plan
Rev	Revision
SANS	South African National Standard

2.5 ROLES AND RESPONSIBILITIES

As per 240-48929482: Tender Technical Evaluation Procedure

2.6 PROCESS FOR MONITORING

N/A

2.7 RELATED/SUPPORTING DOCUMENTS

As per section 2.2

3. TENDER TECHNCIAL EVALUATION STRATEGY

The evaluation criteria will be based upon a two-step process:

3.1 MANDATORY CRITERIA EVALUATION

All TET members as defined in the Tender Technical Evaluation Strategy (and specifically TET member responsibilities) shall independently evaluate each tender in terms of compliance to the defined Mandatory Evaluation Criteria. Each TET member shall provide an individual scoring form on the compliance / non-compliance of all tenderers' responses to the Mandatory Evaluation Criteria. Each TET member shall provide clear justification(s) for each Mandatory Criteria evaluated as non-compliant ('NO'). All individual scoring forms shall be evaluated to check for consistency in scoring of the Mandatory Evaluation Criteria. Should there be inconsistency in the scoring, an internal clarification meeting shall be conducted with all TET members (who performed the evaluation) in the presence of the Commercial Representative. This meeting shall aim to jointly establish which of the tenderers qualify for the next phase of Qualitative Technical Evaluation. In the case where no tenderer meets all Mandatory Evaluation Criteria this shall be formally escalated to the Commercial Representative who shall guide the subsequent process. All meeting minutes shall be recorded and distributed to the Commercial Representative and included in the Tender Technical Evaluation Report.

3.2 QUALITATIVE CRITERIA EVALUATION

Tenderers that have met all the Mandatory Evaluation Criteria shall be evaluated against the Qualitative Criteria as defined in the Tender Technical Evaluation Strategy. The scoring of qualitative criteria shall be based on the degree of achievement by the tenderer to meet the technical requirements. A score shall be allocated as per Table 2: Qualitative Evaluation Criteria Scoring Table, for each technical qualitative criterion. Each TET member shall populate a Tender Technical Evaluation Scoring Form [2] for each tenderer. Note: Individual Qualitative Criteria scores shall only be finalised after all clarification sessions have been concluded.

Table 1: Qualitative Evaluation Criteria Scoring Table

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

4	70	**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.
0	0	**TOTALLY DEFICIENT OR NON-RESPONSIVE**
Note 1: The scoring table does not allow for scoring of 1 and 3. Note 2: Foreseen acceptable and unacceptable risk(s), exceptions and conditions shall be unambiguously defined in the relevant Tender Technical Evaluation Strategy.		

3.3 TECHNICAL EVALUATION THRESHOLD

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

3.4 TET MEMBERS

Table 2: TET Members

TET number	TET Member Name	Designation
TET 1	Hangwi Nematswerani	Senior Supervisor Chemistry
TET 2	Nthabiseng Ntoampe	Senior Chemist Chemistry
TET 3	Michael Mukwevho	Chemistry Manager
TET 4	Anton Govender	System Engineer Auxiliary Engineering

3.5 MANADATORY TECHNICAL EVALUATION CRITERIA

Table 3: Mandatory Technical Evaluation Criteria

Previous experience of at least 3 years of supply and delivery of ion exchange cation and anion resins for use at a power generating industry.

3.6 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Table 4: Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
1.	**Work experience**		**Technical returnables document**	**50%**	
	1.1.	Related Work References specifically for supply and delivery of ion exchange resin in power generating industry	Provide at least 3 references letters from previous or current clients (N.B. One letter per customer or purchase order (the purchase order must have the company letterhead). Score distribution 0 references=0 points 1 references= 2 points 2 references= 4 points 3 or more references= 5 points		50%
2.	**General**		**Technical returnables document**	**50%**	
	2.1	Ability to provide technical support (Be able to analyse the resin for us on annual basis , as well as when required due	Provide proof of laboratory availability for resin analysis Score distribution		15%

		to specific issues with the resin performance). The provision for resin analysis will be at the expense of the supplier	0 no proof of laboratory services for resin analysis complying= 0 point Proof of laboratory services provision for resin analysis = 5 points		
	2.2	Lead time	Proof that the resin that will be delivery within 18 weeks Score distribution No proof or lead time exceeding 18 weeks= 0 point Proof that delivery will be done within 18 weeks = 5 points		10%
	2.3	SDS	Provide SDS for the proposed resin to be supplied Note: Cation resin to be supplied must have the following properties: Physical Properties; Copolymer: Styrene-divinylbenzene, Matrix: Gel, Type: Strong acid cation, Functional Group: Sulfonic acid, Physical Form: Dark amber, translucent, spherical beads Chemical Properties		25%

			Ionic Form: as Shipped H+ Total Exchange Capacity: ≥ 2.0 eq/L (H+ form) Water Retention Capacity: 46.0 – 52.0% (H+ form) Ionic Conversion H+: ≥ 99% Anion resin to be supplied must have the following properties: Physical Properties Copolymer: Styrene-divinylbenzene, Matrix: Gel, Type: Strong base anion, Functional Group: Trimethylammonium, Physical Form: White to yellow, translucent, spherical beads Chemical Properties Ionic Form as Shipped: OH, Total Exchange Capacity: ≥ 1.1 eq/L (OH^-form), Water Retention Capacity: 55.0 – 65.0% (OH^- form,) Ionic Conversion OH^- ≥ 95% $CO3^{2-}$ ≤ 5% Cl^- ≤ 0.5. Both cation and anion resin must be compatible and it must be indicated on the SDS Score distribution		

			0 SDS attached= 0 point 1 SDS= 2 points 2 SDS= 5 points		
				TOTAL: 100	

3.7 TET MEMBER RESPONSIBILITIES

Table 5: TET Member Responsibilities

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

3.8 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.8.1 Risks

Table 6: Acceptable Technical Risks

Risk	Description
1.	None

Table 7: Unacceptable Technical Risks

Risk	Description
1.	Contactor must have experience in supply and delivery of ion exchange cation and anion resin at a power generating industry

3.8.2 Exceptions / Conditions

Table 8: Acceptable Technical Exceptions / Conditions

Risk	Description
1.	None

Table 9: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	Inability to execute the required works as per scope of work issued [1].

4. ACCEPTANCE

This document has been seen and accepted by:

Name	Designation
Nthabiseng Ntoampe	Senior Chemist Chemistry
Anton Govender	System Engineer Auxiliary
Michael Mukwevho	Chemistry Manager

5. REVISIONS

Date	Rev.	Compiler	Remarks
17 April 2025	0	Hangwi Nematswerani	Requirement as part of the procurement procedure

6. DEVELOPMENT TEAM

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

7. ACKNOWLEDGEMENTS

N/A