

Title: **Kriel Power Station Technical Evaluation Strategy for the Supply and Delivery of Ion Exchange Resin for a period of 5 Years on and as and when required basis.**

Unique Identifier: **555-ECS2019**

Alternative Reference Number: **N/A**

Area of Applicability: **Engineering**

Documentation Type: **Strategy**

Revision: **1**

Total Pages: **10**

Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**

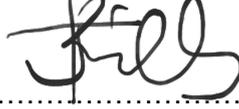
Compiled by



J Pillay
Senior Engineer

Date: 2024-03-07

Functional Responsibility



J Pillay
Senior Engineer

Date: 2024-03-07

Authorised by



R Nelwamondo
Engineering Manager

Date: 2024/03/08

CONTENTS

	Page
1. INTRODUCTION	3
2. SUPPORTING CLAUSES	3
2.1 SCOPE	3
2.1.1 Purpose	3
2.1.2 Applicability	3
2.2 NORMATIVE/INFORMATIVE REFERENCES	3
2.2.1 Normative	4
2.2.2 Informative	4
2.3 DEFINITIONS	4
2.3.1 Classification	4
2.4 ABBREVIATIONS	4
2.5 ROLES AND RESPONSIBILITIES	4
2.6 PROCESS FOR MONITORING	4
2.7 RELATED/SUPPORTING DOCUMENTS	4
3. TENDER TECHNICAL EVALUATION STRATEGY	5
3.1 TECHNICAL EVALUATION THRESHOLD	5
3.2 TET MEMBERS	5
3.3 MANDATORY TECHNICAL EVALUATION CRITERIA	5
3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA	5
3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA	7
3.6 TET MEMBER RESPONSIBILITIES	9
3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS	9
3.7.1 Risks	9
3.7.2 Exceptions / Conditions	9
4. AUTHORISATION	10
5. REVISIONS	10
6. DEVELOPMENT TEAM	10
7. ACKNOWLEDGEMENTS	10

TABLES

Table 1: TET Members	5
Table 2: Qualitative Technical Evaluation Criteria Scoring Matrix	5
Table 3: Qualitative Technical Evaluation Criteria	7
Table 4: TET Member Responsibilities	9
Table 5: Acceptable Technical Risks	9
Table 6: Unacceptable Technical Risks	9
Table 7: Acceptable Technical Exceptions / Conditions	9
Table 8: Unacceptable Technical Exceptions / Conditions	9

CONTROLLED DISCLOSURE

1. INTRODUCTION

Kriel Power Station (PS) uses resin to purify water from the following systems: Condensate Polishing Plant(CPP), Stator Coolant and Demineralization (Demin) plant.

CPP ion exchange resin is utilized as a mixed bed which has both cation and anion resin mixed in a single vessel. The resin bed purifies or polishes the returned condensate and removes corrosion products that will harm boiler and turbine equipment due to deposition. The deposits in the condensate system are particulate iron and copper. Low levels of other contaminants may enter the system through condenser and pump seal leaks or carry-over of boiler water into the steam. Condensate polishers filter out the particulates and remove soluble contaminants by ion exchange.

The Stator Coolant system uses dual column mixed bed resin, which consists of Na^+/OH^- mixed bed form and palladium in one vessel and H^+/OH^- mixed bed form in the second vessel. The mixed bed resin objective is to keep the stator water conductivity as close to pure water as is possible. Palladium coated resin should be 10% of the volume of Na^+/OH^- column, which will assist in minimizing the dissolved oxygen (DO) in the system for the low oxygen regime. Correct conductivity and DO control will minimize corrosion in the system. Stator resin change out is recommended at a frequency of eighteen (18) months or earlier as indicated by the deteriorating chemical parameters.

The Demin plant consists of three ion exchange vessels, which include a combination of strong acid cation resin (cation exchanger) and strong base anion resin (anion exchange) and a combination of the two (mixed bed exchanger). The cation unit exchanges hydrogen for the raw water cations and anion unit exchanges hydroxyl for raw water anions. The mixed bed resin polishes the water to high purity.

After the exhaustion of the CPP and Demin resin, the cation resin is regenerated using sulfuric acid and anion resin using caustic soda solutions.

2. SUPPORTING CLAUSES

2.1 SCOPE

This document provides the technical evaluation strategy that will be used to evaluate tenders for the supply and delivery of ion exchange resin at Kriel Power Station for a period of 5 years.

2.1.1 Purpose

The purpose of this tender technical evaluation strategy (TES) is to define the Mandatory Evaluation Criteria, Qualitative Evaluation Criteria and Technical Evaluation Team (TET) member responsibilities for tender evaluation. The technical evaluation strategy serves as basis for the tender technical evaluation process and will thus ensure that the selected tenderer meets the minimum technical requirements.

2.1.2 Applicability

This document applies to Kriel Power Station's Stores.

2.2 NORMATIVE/INFORMATIVE REFERENCES

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

CONTROLLED DISCLOSURE

2.2.1 Normative

- [1] 240-48929482: Tender Technical Evaluation Procedure
- [2] 240-167602814: Kriel Power Station Scope of Work for the Supply and Delivery of Ion Exchange Resin for a period of 5 Years on and as and when required basis

2.2.2 Informative

- [3] ISO 9001 Quality Management Systems

2.3 DEFINITIONS

2.3.1 Classification

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

2.4 ABBREVIATIONS

Abbreviation	Description
TES	technical evaluation strategy
TET	Technical Evaluation Team
Demin	Demineralized water
CPP	Condensate polishing plant

2.5 ROLES AND RESPONSIBILITIES

As per 240-48929482: Tender Technical Evaluation Procedure

2.6 PROCESS FOR MONITORING

Not Applicable.

2.7 RELATED/SUPPORTING DOCUMENTS

N/A

CONTROLLED DISCLOSURE

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	Nqobile Kolobe	Senior Chemist Chemistry
TET 2	Enock Dube	Senior Supervisor Water Management
TET 3	Jerushan Pillay	Senior Engineer

3.3 MANDATORY TECHNICAL EVALUATION CRITERIA

Consolidated Mandatory Evaluation Result (Yes/No)	YES (letter attached)	NO (letter not attached)
<p>Resin offered are the same product and type as the resins currently installed in the plant.</p> <p>The supplier is to attach a letter confirming if the resins as per below are included in their supply:</p> <p>Amberlite HPR 1200H+, Amberlite HPR 4811Cl, Amberlite HPR 1600H+, Amberlite HPR 9000OH, Amberlite HPR 650H+, Amberlite HPR 1300Na+, Amberlite HPR 550OH</p>		

3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

The qualitative criteria will be scored according to the scoring matrix set out in the Tender Engineering Evaluation

Table 2 shows the scoring matrix that will be used.

Table 2: Qualitative Technical Evaluation Criteria Scoring Matrix

Score	%	Definition
5	100	<p>COMPLIANT</p> <ul style="list-style-type: none"> Meet technical requirement(s) AND; No foreseen technical risk(s) in meeting technical requirements.

CONTROLLED DISCLOSURE

4	80	COMPLIANT WITH ASSOCIATED QUALIFICATIONS <ul style="list-style-type: none">• Meet technical requirement(s) with;• Acceptable technical risk(s) AND/OR;• Acceptable exceptions AND/OR;• Acceptable conditions.
2	40	NON-COMPLIANT <ul style="list-style-type: none">• 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.		

CONTROLLED DISCLOSURE

3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Table 3: Qualitative Technical Evaluation Criteria

	PREVIOUS EXPERIENCE	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Evaluation Scoring Breakdown				
				0 (0%)	2 (40%)	4 (80%)	5 (100%)	
1.	1.1	The tenderer to supply proof of similar work undertaken in the past. This similar work will refer to resin supply. This will include name of company for whom work was performed, duration of the contract, details of contact person (name and contact details)	NEC document Part 3: Scope of Work, Section 3	30	Does not submit information/Insufficient information supplied	Submits 1 previous resin supply reference.	Submits 2 previous resin supply references.	Submits 3 previous resin supply references.
2.	Services	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Evaluation Scoring Breakdown				
				0 (20%)	2 (40%)	4 (80%)	5 (100%)	
	2.1	Submit the list of services included in the price.	NEC document Part 3: Scope of Work, Section 3	20	No services provided/Does not submit information/Insufficient information	Supplies the following: 1. Resin Analysis 2. Stock holding	Supplies the following: 1. Resin Analysis 2. Technical support at the	Supplies the following: 1. Resin Analysis 2. Technical support at the station 3.

The Supply and delivery of ion exchange resin at Kriel Power Station for a period of 5 years as an when required.

Unique Identifier: **555-ECS2019**
 Revision: **2**
 Page: **8 of 10**

						station 3. Stock holding	Training 4. Stock holding
Assurance Requirements	Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Evaluation Scoring Breakdown				
			0 (20%)	2 (40%)	4 (80%)	5 (100%)	
3.1	Tenderer to supply resin within required lead times. The tenderer shall submit a letter explicitly mentioning lead times.	NEC document Part 3: Scope of Work, Section 3	30	Supplies resin within 8 weeks of order/Does not submit information/Insufficient information supplied	Supplies resin within 6 weeks of order	Supplies resin within 4 weeks of order	Supplies resin within 2 weeks of order
3.2	The supplier submits the manufactures material data sheets for all the resin in the scope of work.	NEC document Part 3: Scope of Work, Section 3	20	Does not submit information/Insufficient information supplied	Supplies all the following: Amberlite HPR 650H+, Amberlite HPR 1300Na+, Amberlite HPR 550OH.	Supplies all the following: Amberlite HPR 1600H+, Amberlite HPR 9000OH, Amberlite HPR 650H+, Amberlite HPR 1300Na+, Amberlite HPR 550OH	Supplies all the following: Amberlite HPR 1200H+, Amberlite HPR 4811Cl, Amberlite HPR 1600H+, Amberlite HPR 9000OH, Amberlite HPR 650H+, Amberlite HPR 1300Na+, Amberlite HPR 550OH

3.6 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

3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.7.1 Risks

Table 5: Acceptable Technical Risks

Risk	Description
1.	NONE

Table 6: Unacceptable Technical Risks

Risk	Description
1.	Failure to provide ion exchange resin used on the plant

3.7.2 Exceptions / Conditions

Table 7: Acceptable Technical Exceptions / Conditions

Risk	Description
	NONE

Table 8: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	NONE

CONTROLLED DISCLOSURE

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation	Signature
Enock Dube	Snr Supervisor Tech Chemistry	
Nqobile Kolobe	Senior Chemist Chemistry	
Jerushan Pillay	Senior Engineer	

5. REVISIONS

Date	Rev.	Compiler	Remarks
December 2023	1	Nqobile Kolobe	Final Document for authorisation
March 2024	1.1	Jerushan Pillay	Changed to add that suppliers must give a letter for confirmation of resin supply for mandatory requirements
March 2024	2	Jerushan Pillay	Final Document for authorisation

6. DEVELOPMENT TEAM

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

Nqobile Kolobe

Jerushan Pillay

7. ACKNOWLEDGEMENTS

Sidwell Muthavhine

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.