

Title: **Tender Technical Evaluation
Strategy for Lethabo Power
Station Loading of Spiral
Reverse Osmosis CIP
Chemicals Project**

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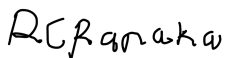
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1. INTRODUCTION

Lethabo Power Station is situated in the Vaal Triangle in the Free State province. The Power Station comprises of 6 x 618 MW turbo-generator boiler units.

The desalination plant at Lethabo Power Station is designed to desalinate 500 m³/h of cooling water with the feed to the plant coming from the effluent concentration plant (ECP) sump. The desalination process consists of an ultrafiltration (UF) process, and a reverse osmosis (RO) process. During UF and RO operations, the membranes can foul or scale which results in deterioration of the performance of the plant. Consequently, chemical cleaning of the membranes is required to periodically remove foulants/scale from the membrane surface, and thus restore the performance of the membrane as close as possible to its original performance. The Clean In Place (CIP) system is utilized for this purpose.

The CIP system consists of a CIP tank in which the CIP chemicals are made up by plant personnel. The plant operators carry the bags of dry CIP chemicals up a flight of stairs in order to offload at the top of the CIP tank. During the process of ascending and descending the stairs, the plant personnel risk getting injured while carrying the hazardous CIP chemicals. The CIP makeup system needs to be upgraded in order to assist the operators to operate the system in a safe manner with as little manual handling as possible.

2. SUPPORTING CLAUSES

2.1 SCOPE

This document aims to provide guidance on the technical evaluation process to be followed when evaluating the tender submissions for Lethabo Power Station Loading of SRO CIP Chemicals project.

The detailed scope of work can be seen in the Works information.

High Level breakdown of the scope:

- Detailed design and engineering of the system, which is to be installed.
- Recommendations regarding the required design.
- Manufacturing of the new system.
- Decommissioning and removal of any existing equipment where applicable.
- Installing all necessary C&I and electrical equipment.

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- Installation includes welding of sampling lines, valves and probes where necessary, as well as providing the scaffolding required to work.
- Testing of the installed system.
- Commissioning of the new system
- Manuals and specifications are to be provided for the new system, and the supplier is responsible to train staff on the use of the new system.
- Training (Theoretical and practical) to be provided to all relevant staff i.e. Chemical services, maintenance and operating.

2.1.1 Purpose

The purpose of this tender technical evaluation strategy is to define the Mandatory Evaluation Criteria, Qualitative Evaluation Criteria and technical evaluation team (TET) member responsibilities for tender technical evaluation for the upgrade of Lethabo Power Station Loading of SRO Cleaning in Place Chemicals Project. The technical evaluation strategy serves as basis for the tender technical evaluation process.

2.1.2 Applicability

The document applies to Generation Plant Engineering, Lethabo Power Station and the Lethabo SRO Cleaning in Place team.

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] 240-53716726 Tender Technical Evaluation Scoring Form
- [3] 375-LET-AABB-D00138-178 Lethabo PS Loading of SRO Chemicals Technical Specification

2.2.2 Informative

N/A

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2.3 DEFINITIONS

Definition	Description
Tender	A tender refers to an open or closed competitive request for quotations/ prices against a clearly defined scope / specification

2.3.1 Classification

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

2.4 ABBREVIATIONS

Abbreviation	Description
C&I	Control and Instrumentation
CIP	Clean In Place
D&S	Design and Specification
ECP	Effluent Concentration Plant
EDWL	Engineering Design Work Lead
EE	Electrical Engineering
N/A	Not Applicable
NEC	New Engineering Contract
OPE	Outside Plant Engineering
PFD	Process Flow Diagram
RO	Reverse Osmosis
SRO	Spherical Reverse Osmosis
TET	Technical Evaluation Team
UF	Ultra Filtration
WTP	Water Treatment Plant

2.5 ROLES AND RESPONSIBILITIES

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

2.6 PROCESS FOR MONITORING

N/A

2.7 RELATED/SUPPORTING DOCUMENTS

N/A

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3. TENDER TECHNICAL EVALUATION STRATEGY

3.1 TECHNICAL EVALUATION THRESHOLD

The tender submission must contain the mandatory criteria before being assessed on the qualitative criteria. The minimum weighted final score (threshold) required with regards to the qualitative criteria for a tender to be considered compliant from a technical perspective is 70%. A weighted score card approach will be used to evaluate the tender submission against the specifications and Employer's requirements.

3.2 TET MEMBERS

Table 1: TET Members to be appointed. 

TET number	TET Member Name	Designation
TET 1	Mark Verwey	Lethabo OPE-: System Engineer – Outside Plant
TET 2	Piet Holtzhausen	Lethabo OPE: Senior Engineer Technologist
TET 3	Remofiloe Ranaka	Lethabo D&S: Senior Engineer Technologist Chemical
TET 4	Charles Radebe	Lethabo Senior Advisor Chemical Services
TET 5	Lauritz Clasen	Lethabo D & S: Senior Engineer
TET 6	Nolwazi Ngcobo	Lethabo C&I System Engineer – WTP, Outside Plant
TET 7	Ntebaleng Maudi	Lethabo EE: System Engineer
TET 8	Buhle Nyembe	Lethabo Chief Engineer: Electrical
TET 9	Suven Govender	Lethabo Civil System Engineer
TET 10	Aluwani Maumela	Gx: Senior Civil Engineer

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3.3 MANDATORY TECHNICAL EVALUATION CRITERIA

Table 2: Mandatory Technical Evaluation Criteria

The technical evaluation will be done based on the tender technical evaluation procedure 240-48929482.

Mandatory criteria are 'must meet' criteria. These criteria shall not be weighted, or point scored and shall be assessed on a yes/no basis as to whether the criteria are met. An assessment of 'No' against any criterion shall technically disqualify the tenderer and shall not be further evaluated against qualitative criteria.

	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Motivation for use of Criteria
1.	The project lead discipline engineer, mechanical (Pr. Eng or Pr. Tech) are required to be professionally registered with ECSA. Proof of ECSA registration should be submitted (with registration number)	ECSA Registration Certificate	

3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Table 3 indicates the qualitative technical evaluation criteria that shall be used by the technical tender evaluation team. For requirements with more than one returnable item, see Table 5 for details on how scoring will take place.

Table 3: Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
1.	Process Requirements			20	
	1.1	<p>The Contractor to supply a basic process flow diagram (PFD) indicating the entire offloading system.</p> <p>Scoring: 5 – The PFD is complete with all necessary process flows. 4 – The PFD is partially complete with some of the necessary process flows. 2 – The PFD is partially complete but missing crucial information. 1 – No PFD was submitted or the PFD is not relevant.</p>	NEC document Part 3: Scope of Work,		50
	1.2	<p>Programme of works for manufacturing as well as installation of products</p> <ol style="list-style-type: none"> 1. How long will manufacturing take 2. Lead time (from order placed until equipment arrives on site) 3. Installation time of equipment/system must not be more than 35 days <p>Scoring: 5 – The submitted program is complete detailing all steps to complete the project.</p>	NEC document Part 3: Programming Constraints Section 2.6, Scope of Work, Section 3		25

		<p>4 – The submitted program is partially complete detailing most of the steps to complete the project.</p> <p>2 – The submitted program is partially complete detailing some of the steps to complete the project.</p> <p>1 – No schedule submitted or the submitted schedule is not relevant.</p>			
	1.3	<p>The contractor must be able to provide training by an experienced trainer to Eskom personnel. The training should cover the operation, maintenance and functionality of the complete system and an outline of training should be provided. The following is given:</p> <ul style="list-style-type: none"> • A breakdown of typical training on the installed equipment • Proof that the company has competent training personnel that can provide training to the relevant Eskom personnel <p>Scoring: 5 – Proof of experienced trainer submitted with a detailed breakdown of the training. 1 – No proof of experienced trainer submitted, or trainer is not experienced or breakdown of training was not provided</p>	NEC document Part 3: Scope of Work, Section 3		25
2.	Mechanical and Equipment Requirements			30	
	2.1	High level construction method statement, the method statement clearly demonstrates the Tenderer’s compliance with the full mechanical scope of work as detailed in the technical specification. The following is addressed:			50

		<ul style="list-style-type: none"> • Size, schedule and piping material that will be used. • Flanged or welded connections on piping is stated. • Eductor operating parameters are given. • Eductor illustration is given or working principle is described 			
	2.2	Proof of certification of welding to be done of steel piping (If applicable) ISO 3834-2 or in the event of HDPE piping being used a statement of which fusion welding standard will be used on the piping joints.			25
	2.3	Lead Mechanical Engineer C.V required indicating experience in piping design			25
3.	Civil & Structural Requirements			10	
	3.1	<p>The Tenderer is to submit a high-level method statement for the design and construction works required for the project. The method statement should demonstrate the Tenderer's understanding of the scope and includes the following as a minimum:</p> <ul style="list-style-type: none"> • Proposed plant, equipment and tools • Methodology for designing the concrete plinth/foundation to be integrated into existing infrastructure, imposed loads, assessment of the available space, proposed corrosion epoxy/paint and preliminary size of concrete plinth and height of bund wall. 	NEC document Part 3: Scope of Work, Sections 3 and 6.4		60

		<ul style="list-style-type: none"> • Methodology for the construction of the plinth/foundation, sourcing of materials (e.g., concrete) and the required testing to be done (e.g., cube strength). • Foreseen risks and concerns. • Required temporary works (if any) <p>Scoring: 5 – Method statement submitted illustrates all the minimum requirements 4 – Method statement submitted illustrates three or more, but not all of the minimum requirements 2 - Method statement submitted illustrates less than two of the minimum requirements 1 – No submission</p>			
	3.2	<p>Tenderer to submit the CV of the Lead Structural Design Engineer or Technologist as per the project organogram.</p> <p>Lead Structural Design Engineer or Technologist is to have a minimum of 5 years relevant design experience and is to be registered as Professional Engineer or Technologist with ECSA.</p> <p>If the lead Structural Design Engineer or Technologist is not employed by the main Contractor, then a letter of intent signed by both parties where the subcontractor will be used for resources. The letter should be specific on the roles and responsibility for the resource.</p> <p>Scoring: 5 – More than 5 years relevant experience for for Structural Design Engineer or Technologist</p>	<p>NEC document Part 3: Scope of Work, Sections 3 and 6.4</p>		40

		<p>4 – 5 years relevant experience for Structural Design Engineer or Technologist 2 - Less than 5 years relevant experience for Structural Design Engineer or Technologist. 1 – No submissions made or Letter of intent not submitted and/or not signed by both parties.</p>			
4.	Electrical Requirements			20	
	4.1	<p>Methodology of the electrical work</p> <p>Scoring:</p> <p>5 – Methodology is fully compliant to the electrical scope of work 4 - Methodology is partially compliant to the electrical scope of work 2 - Methodology is submitted but missing important parts of the scope of work 0 – No methodology submitted or methodology not relevant to the scope of work</p>	<p>NEC document Part 3: Scope of Work, Section 3.1</p>		50
	4.2	<p>Provide the load list and cable sizes for the scope of work</p> <p>Scoring:</p> <p>5 – Load list and cable sizes provided with detailed accurate information 2 - Load list and cable sizes provided with missing information 0 – No load list or cable sizes submitted or load list and cable sizes not relevant to the project</p>	<p>NEC document Part 3: Scope of Work, Section 3.1</p>		25

	4.3	<p>Electrical Technician with trade test and at least 4 years' experience</p> <p>Scoring:</p> <p>5 – Electrical Technician with trade test and at least 4 years' experience</p> <p>4 - Electrical Technician with trade test with more than two years' experience and less than four years</p> <p>2 - Electrical Technician with trade test with more less than two years' experience</p> <p>0 – No Electrical Technician with trade test or no experience</p>	<p>NEC document Part 3: Scope of Work, Section 3.1</p>		25
5.	C&I Requirements			20	
	5.1	<p>The <i>Tenderer</i> submits datasheets of proposed pressure gauges and chemical seals</p> <p>Scoring:</p> <p>5 - Relevant datasheet provided with fit for purpose specification</p> <p>4 - Datasheet for instrument is provided but is partially fit for purpose</p> <p>0 - Datasheet is provided but not fit for purpose or no datasheet provided</p>	<p>NEC document Part 3: Scope of Work, Section 3.1</p>		50
	5.2	<p>The <i>Tenderer</i> provides a CV of an instrument technician with five years' experience relating to instrumentation.</p> <p>Scoring:</p>	<p>NEC document Part 3: Scope of Work, Section 3.1</p>		50

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		<p>5 - The employee of the Tenderer has five or more years relevant experience to instrumentation</p> <p>4 - The employee of the Tenderer has less than five but more than two years relevant experience to instrumentation</p> <p>2 - The employee of the Tenderer has less than two but more than one-year relevant experience to instrumentation</p> <p>1 - The employee of the Tenderer has less than one-year relevant experience to instrumentation</p> <p>0 - The employee of the Tenderer has no relevant experience or no CV for instrument technician is provided</p>			
				TOTAL: 100	

3.5 TET MEMBER RESPONSIBILITIES

Table 4: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3	TET 4	TET 5	TET 6	TET 7	TET 8	TET 9	TET 10
1	X	X								
Qualitative Criteria Number	TET 1	TET 2	TET 3	TET 4	TET 5	TET 6	TET 7	TET 8	TET 9	TET 10
1.1			X	X						
1.2			X	X						
1.3			X	X						
2.1	X	X								
2.2	X	X								
2.3	X	X								
3.1									X	X
3.2									X	X
4.1							X	X		
4.2							X	X		
4.3							X	X		
5.1					X	X				
5.2					X	X				

3.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.6.1 Risks

Table 5: Acceptable Technical Risks

Risk	Description
1.	<p>The tenderer submits a philosophy that covers process description in accordance with a block flow diagram on how the requirements will be met as desired in the Works with regards to the following even though not complete:</p> <ol style="list-style-type: none"> 1. Eductor flows 2. Pressures 3. Instrumentation for measurements (where applicable) 4. Valves/dampers for operating/control (where applicable) 5. Operating and control procedure(s) 6. Interface points to the existing process plant and potential impacts (if any) to the existing process plant design criteria (flows, pressure, temperature, etc)
2.	<p>Programme of works for manufacturing, installation and commissioning of the whole system outlining the following with minor deviations:</p> <ol style="list-style-type: none"> 1. How long will manufacturing take 2. Lead time (from order placed until equipment arrives on site) 3. Installation time of equipment/system 4. Commissioning & Testing
3.	<p>Method Statement includes at least 3 of the following activities:</p> <ol style="list-style-type: none"> 1. Eductor and ancillary equipment installation 2. Valve installation 3. Documentation and administration (Process flow diagrams, P&ID's and sign-off processes) 4. Testing and commissioning
4.	<p>The following is given with regards to the training that will be provided:</p> <ol style="list-style-type: none"> 1. A breakdown of typical training on the installed equipment which is comprehensive but incomplete

	2. Proof that the company has competent training personnel that can provide training to the relevant Eskom personnel
5.	List of deviations submitted with minor deviations from the scope of work present
6.	High level construction method statement, the method statement clearly demonstrates the Tenderer's compliance with the full mechanical scope of work as detailed in the works. At least 4 of the following points have been provided: 1. Schedule including mobilisation to site (10) 2. Sample Process Flow Diagrams, Piping and Instrumentation (10) 3. Mechanical Equipment (10) 4. FATS/SATS (10) 5. Sample QCP's for mechanical scope of work (10)
7.	Statement of compliance and deviations lists with acceptable deviations
8.	Compatibility confirmation letters for the equipment in relation to obsolescence

Table 6: Unacceptable Technical Risks

Risk	Description
1.	The tenderer submits a philosophy that is a process description in accordance to a block flow diagram on how the requirements will be met as desired in the Works Information with less than 3 of the points below: 1. Eductor flows 2. Pressures 3. Instrumentation for measurements (where applicable) 4. Valves/dampers for operating/control (where applicable) 5. Operating and control procedure(s) 6. Interface points to the existing process plant and potential impacts (if any) to the existing process plant design criteria (flows, pressure, temperature, etc)
2.	Programme of works for manufacturing as well as installation of products have been submitted with regards to the points listed below, but the installation time has not been broken down into subsystems



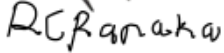
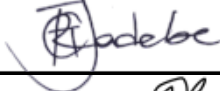


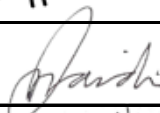

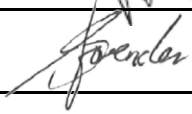
	<ol style="list-style-type: none">1. How long will manufacturing take2. Lead time (from order placed until equipment arrives on site)3. Installation time
3.	The contractor must be able provide training by an experienced trainer to Eskom personnel. The training should coverer the operation, maintenance and functionality of the complete system and an outline of training should be provided. The did not show training content or did not provide proof of competency of the trainers
4.	List of deviations from process requirements has either not been submitted or it has been submitted with major deviations from the scope of work
5.	Non-compliance or deviation with sections of the electrical technical specifications and standards without adequate explanation or alternative
6.	Pr. Eng certificate/verifiable proof with CV of the relevant person/s who will take accountability for the mechanical design and work was not provided.
7.	No valid ISO 3834-2 certification or certification is expired.
8.	No valid standard stated for HDPE welding.

3.6.2 Exceptions / Conditions

None

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation	Signature
Mark Wervey	Lethabo OPE-: System Engineer – WTP, Outside Plant	
Piet Holtzhausen	Lethabo OPE: Senior Engineer Technologist	
Remofiloe Ranaka	Lethabo D & S: Senior Engineer Technologist Chemical	
Charles Radebe	Lethabo Senior Advisor Chemical Services	
Lauritz Clasen	Lethabo D&S: Senior Engineer	
Nolwazi Ngcobo	Lethabo C&I System Engineer – WTP, Outside Plant	
Ntebaleng Maudi	Lethabo EE: System Engineer	
Buhle Nyembe	Lethabo Chief Engineer: Electrical	
Suven Govender	Lethabo Civil System Engineer	

5. REVISIONS

Date	Rev.	Compiler	Remarks
December 2025	1	R.C Ranaka	First Revision

6. DEVELOPMENT TEAM

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

Lethabo SRO CIP Project Team

7. ACKNOWLEDGEMENTS

None

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