Eskom	Strategy	Hendrina Power Station

Title:	**Tender Technical Evaluation Strategy – High Pressure Water Jetting of Main Turbine Condensers**	Unique Identifier:	**240-107677940**
		Alternative Reference Number:	**N/A**
		Area of Applicability:	**Generation (Engineering)**
		Documentation Type:	**Standard**
		Revision:	**3**
		Total Pages:	**11**
		Next Review Date:	**July 2023**
		Disclosure Classification:	**CONTROLLED DISCLOSURE**

Compiled by	Reviewed by	Approved by
Deven Dieter Bodenstedt	**Thabo Nkuna**	**Bezi Mvula**
Condensate System Engineer	**Acting Turbine Engineering Manager**	**Acting Engineering Manager**
Signature: ……  ……	Signature: ……	Signature: ……
Date: ……11/10/2022……	Date: ……	Date: ……

TABLE OF CONTENTS

Page

LIST OF TABLES

1. INTRODUCTION

This specification was compiled to assist technical, procurement and managerial personnel in sourcing suitable service providers for performing and successfully cleaning condenser tubing by mean of high-pressure water jetting. The minimum requirements in this specification, including the request for tender returnables, are intended to facilitate the fair and unbiased evaluation of tenders.

1.1 Scope

The aim of this document is to provide specific requirements regarding the methodology, quality and safety aspects to be considered when planning and executing HPWJ on condenser tubing at Hendrina Power Station.

1.1.1 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, sourcing suitable service providers for performing and successfully cleaning condenser tubing by means of HPWJ. This technical evaluation strategy serves as a basis for the tender technical evaluation process.

1.1.2 2.1.2 Applicability

This document applies to all wet cooled shell-and-tube condensers at Hendrina Power Station where:

- Tubing is not coated with a protective coating. HPWJ will most likely result in damage of the existing protective coating.
- Tubing has an ID greater than 15mm.

1.2 References

[1] 240-107677940 Rev 2: Specification Standard for High Pressure Water Jetting of Condenser and Heat Exchanger Tubes.

[2] 240-56030499: Condenser Healthcare Guideline, Revision 1.

[3] 240-62196227: Life Savings-Rules, Revision 6

[4] Outage Scope of Work (Units 1 -10) **Doc Identifier: F/HPWJSOW-T/1-10** (Sections 7.2. and 7.3., on pages 17 - 24 & 25 - 30)

1.2.1 Disclosure Classification

Public domain: published in any public forum without constraints (either enforced by law, or discretionary).

1.3 Abbreviations

Abbreviation	Description
HPWJ	High Pressure Water Jetting
SOW	Scope of Work
CW	Cooling Water
TETM	Technical evaluation team member
QCP	Quality Control Plan
RT&D	Research, Testing and Development
TET	Technical Evaluation Team

1.4 Roles and Responsibilities

System Engineer shall ensure that this specification is utilised for sourcing suitable service providers for performing and successfully cleaning condenser tubing by means of HPWJ. This specification will form the basis for fair and accurate tender evaluations by the evaluation team.

2. TENDER TECHNICAL EVALUATION STRATEGY

2.1 Technical Evaluation Threshold

- The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 75%. Should no *Contractor* meet the minimum threshold of 75%, Eskom reserves the right to negotiate and/or consider *Contractors* that obtained between 70% and 74%.
- If any technically unacceptable deviations or exclusions are listed in the tender, the tender will be deemed as an alternative tender and considered to be non-responsive and it shall not be evaluated. No alternative tenders are allowed. If no technical deviations are mentioned in the tender it will be assumed that the *Contractor* shall fully comply with the scope of work.
- If the tender returnables are not provided, the scoring for the specific criteria shall be zero as described in Table 1: Scoring of Qualitative Criteria" on the next page. If the mandatory requirements are not submitted, the tender shall be seen as non-responsive.

Table 1: Scoring of Qualitative Criteria

Score	(%)	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.
0	0	**TOTALLY DEFICIENT OR NON-RESPONSIVE**

2.2 TET Members

Technical evaluation will be done by the member listed on table below:

Table 2: TET Members

TET number	TET Member Name	Designation
TET 1	Deven Dieter Bodenstedt	Condensate System Engineer
TET 2	Joseph Mkansi	Cooling Water & Pumps System Engineer
TET 3	Francois Du Preez	Senior Consultant
TET 4	Herman Van Niekerk	Senior Consultant
TET 5	Stefan Erasmus	Senior Consultant

3. TECHNICAL TENDER RETURNABLES

3.1 Technical Returnables Required at Tender Stage

The *Contractor* shall supply the following information as tender returnable as part of his tender. Should the mandatory returnable not be supplied tender will be rejected and considered non-complaint. The qualitative criteria will be used to evaluate the suitability and compliance of the tender to the actual scope of work requirements.

a) The *Contractor* shall provide verifiable reference list of HPWJ cleaning contracts using a minimum of 800 bar working pressure, of industrial heat exchangers in the last 5 years. At least three references shall be provided.

b) The *Contractor* shall provide a list of exclusions or deviations to the attached **SOW** (see Reference [4] in section 1.2 of this document), if there are no exclusions or deviations a clear statement must be provided as such, if no statement is provided then the tender will be negatively affected.

c) The *Contractor* to populate Tables on page 24 of **SOW** with the details of the equipment that will be available on site for the full duration of the contract to complete the cleaning of the condenser within the allowed time period. (Example: If only two pumps will be used only the first two lines of the table are to be completed).

d) Technical datasheets for the rotating tube cleaning nozzles, HPWJ pumps and flexible hoses for cleaning the tubes as described in Table 2 on page 20 of the **SOW**. The minimum information to be shown on the datasheet is: names of suppliers of HPWJ equipment to be used as, flow rate at 1 000 bar working pressure for the HPWJ pumps as well as pressure rating of the HPWJ nozzles to be used, the outside diameter of those nozzles, and the tube inner diameter range the nozzle is intended for. The HPWJ cleaning nozzle datasheets shall furthermore detail the design features of the cleaning nozzles for unplugging tubes and removing deposits of scale from the inner tube walls.

e) The Contractor provides a preliminary method statement for cleaning the condenser tubes. The method statement includes, amongst others, items like safety requirements, commissioning, monitoring during the cleaning process, equipment, etc.

f) Contractor to provide clear statement in the tender that an endoscope/fiberscope which complies with the specifications listed in Table 1 on page 19 of the **SOW**, will be provided for use throughout the HPWJ production cleaning outage period.

4. TECHNICAL TENDER EVALUATION CRITERIA

4.1 TET Gatekeepers

	Mandatory Technical Criteria Description	**Motivation for Gatekeeper**
1	The Contractor shall provide a verifiable reference list of HPWJ cleaning contracts using a minimum of 800 bar working pressure, of industrial heat exchangers in the last 5 years. Verifiable references of at least 5 projects successfully conducted in the past 5 years are required.	To ensure high quality of workmanship.
2	The *Contractor* shall supply suitable Endoscope/Fiberscope equipment to facilitate pre- and post-cleanliness inspections of condenser tubes. The Fiberscope shall have a 'reach-length' of 9m and should have a digital display that includes image capture and recording capabilities.	To enable *Employer* to perform endoscopic inspections and rightly assess the quality of tube cleanliness.

4.2. Qualitative Technical Evaluation Criteria

Table 3: Qualitative Technical Evaluation Criteria

Number	Qualitative Technical Criteria Description		Reference	Criteria Weighting (%)	Criteria Sub Weighting (%)
	1	Exclusions and omissions to the referenced Outage Scope of Work - Doc Identifier: F/HPWJSOW-T/1-10 (Sections 7.2. and 7.3., on pages 17 – 24 & pages 25 – 30). As part of this section the technical datasheets of the nozzles, hoses and pumps as well as completed Tables on page 24 of the SOW, as provided in the tender, are considered and evaluated.	Point (b), (c) & (d) under section 3.1 on page 6		70
	2	Preliminary method statement for cleaning the condenser tubes.	Point (e) under section 3.1 on page 6		30
				TOTAL	100%
NB! A minimum total of 75% is required in this section for further consideration. The contractor shall ensure that all the returnables are submitted as required in section 3 on page 6.					

4.1. Tet Member Responsibilities

Table 4: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3	TET 4	TET 5
1	X	X	X	X	X
2	X	X	X	X	X
Qualitative Criteria Number	**TET 1**	**TET 2**	**TET 3**	**TET 4**	**TET 5**
1	X	X	X	X	X
2	X	X	X	X	X

4.2. Foreseen Acceptable / Unacceptable Qualifications

Table 5: Acceptable Technical Risks

Risk	Description
1	Some minor equipment needs to be hired by the contractor
2	Minor deviations or clarifications to the technical specification

Table 6: Unacceptable Technical Risks

Risk	Description
1	Contractor hiring all the required equipment
2	Final method statement, safety work procedure and quality control plan are insufficient
3	Any significant deviations from the safety requirements specified in section 7.2.3 of the **SOW**
4	Any of the equipment does not meet the requirements as detailed in section 7.2.4 of the **SOW**
5	The technical datasheets do not demonstrate compliance to the requirements detailed in sections 7.2.4 of the **SOW** & 3.1 of this document
6	Completed Tables (page 24 of **SOW**) do not demonstrate compliance to the requirements detailed in sections 7.2.4 of the **SOW** & 3.1 of this document
7	The Contractor does not provide an endoscope, or the endoscope does not meet the requirements of section 7.2.4 of the **SOW**

Table 7: Acceptable Technical Exceptions / Conditions

Risk	Description
1	Compliance to virtually all technical specification requirements

Table 8: Unacceptable Technical Exceptions / Conditions

Risk	Description
1	Non-compliance to most technical specification requirements
2	The use of diesel generators on the plant

5. AUTHORISATION

This document has been seen and accepted by:

Name	Designation
Thabo Nkuna	Acting Turbine Engineering Manager
Bezi Mvula	Acting Engineering Manager
Francois Du Preez	Senior Consultant
Herman van Niekerk	Senior Consultant
Stefan Erasmus	Chief Technologist

6. REVISIONS

Date	Rev	Compiler	Designation	Remarks
03/2021	2	Kediemetse Moloko	Chief Engineer at RT&D	Final Rev 2 Document for Authorisation and Publication
06/2022	3	Deven Bodenstedt	Condensate System Engineer	Updated Rev 2 for Hendrina PS

ADAPTED BY:

- Deven Dieter Bodenstedt; Condensate Systems Engineer at Hendrina Power Station

11/10/2022

7. ACKNOWLEDGEMENTS:

- Kediemetse Moloko; Chief Engineer at RT&D and Original Compiler of this Document
- Gerhard Hoffman; Colleague and Mentor at Hendrina Power Station
- Francois Du Preez, Herman van Niekerk, and Keith Northcott; Senior Consultants