Eskom	Strategy	Commercial

Title:	**Technical Evaluation Strategy for the Blower Plants and South Fuel oil plant PLC Replacement Project at Hendrina Power Station.**	Unique Identifier:	**xxxx**
		Alternative Reference Number:	**N/A**
		Area of Applicability:	**Commercial**
		Documentation Type:	**Strategy**
		Revision:	**0**
		Total Pages:	**20**
		Next Review Date:	**N/A**
		Disclosure Classification:	**CONTROLLED DISCLOSURE**

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TABLES

1. INTRODUCTION

This report describes strategy and the technical evaluation criteria designed and created to evaluate the, Design, Supply of Materials, Construction and Installation of Equipment to Complete a Blower Plant and South Fuel Oil Plant Control System as per set Standards at Hendrina Power Station.

The tender process will be an open tender to the market to ensure transparency and competitiveness.

This evaluation strategy will be developed and used for evaluation of the submitted tenders to gauge accuracy and compliance with the set evaluation criteria to ensure the successful execution of this project.

The scope for this project entails the following:

- Site evaluation of the current installation and the evaluation of the PLC code. It also entails checking of the blower and fuel oil plant operations, checking of the available space and the location of proposed installation, cable routing and networking.
- Provide the detail design of the project based on the project scope.
- Completion of all project documents.
- The factory testing and approval of the operations of the project equipment.
- The delivery and installation of all the equipment.
- Commissioning of the systems, integration and site acceptance testing.
- System Guarantee and Maintenance period.

The technical evaluation will be completed by a Technical team that understands the scope and the goal of the project.

2. SUPPORTING CLAUSES

2.1 SCOPE

This document outlines the supplier technical Evaluation of the blower and fuel oil plants PLC refurbishment project and covers the different aspects that will be evaluated and scored by the multi-disciplinary Technical Evaluation Team (TET) to complete the technical evaluation of the enquiry. The team members are listed and appointed in this document along with their responsibilities. The document also describes the acceptable and unacceptable risks and qualifications and/or conditions.

The Technical Evaluation Strategy will define the following technical evaluation criteria:

- Mandatory Evaluation Criteria
- Qualitative Evaluation Criteria
- TET Member Responsibilities
- Acceptable / Unacceptable Qualifications.

Once the Technical Evaluation Strategy is authorised no changes will be made to the evaluation criteria.

2.1.1 Purpose

The purpose of a 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.

The purpose of this tender technical evaluation Strategy is to summarise the technical evaluation criteria and capture all outcomes, documentation / information associated with the technical evaluation process of this project.

2.1.2 Applicability

This Strategy applies to the technical evaluation process that will be followed to evaluate the tender returnables for the Blower and Fuel oil plants PLC refurbishment project as defined for Hendrina power station. Hendrina Power station is part of the Generation Coal 3 division.

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] Eskom procurement and supply chain management procedure.

[3] 32-1034: Eskom Procurement Policy

2.2.2 Informative

The *Contractor* will refer to the latest documents that describe the plant operation and control philosophies:

[1] 380-HEN-AABB-D00138-14 Hendrina Refurb of Blower and S Fuel Oil Plant PLCs Tech Spec EoP Report Rev1.

[2] 380-EN-AABZ28-SP0004-13 Operating Training FFP Section 7 Cleaning Air Supply Units 1 to 5 Rev 2

[3] 380-HEN-AABZ28-SP0004-14 Operating Training FFP Section 6 Cleaning Air Supply Units 6 to 10 Rev 2

[4] 25.15/35278 Rev. 2: Hendrina Power Station Common Plant Pulse Jet FFP Air Blower System P&ID Concept Design Information

[5] 0.15/30737 Sheets 1&2: Hendrina Power Station Common Processor Plant MCB Distribution circuit diagram

[6] 25.15/38151 Hendrina Power Station Units 1-5 380V Blower House Boards 1 and 2 Single Line Diagram

[7] Operating Technical Specifications: Hendrina Power Station Outside Plant Module 2 Fuel Oil Systems Section 2 South Fuel Oil Plant

[8] MESK101Unit 6-10 South Fuel Oil Plant-Plant Pumps (PLC Modified)

[9] 25.15/39445 rev 0, 25.15/39432 rev0, 25.15/339426, 25.15/39425, 25.15/39414, 25.15/39413 for unit 6 to 10 South Service Fuel Oil Pump Plant.

2.3 DEFINITIONS

NA

2.4 ABBREVIATIONS

Abbreviation	Description
ACS	Automation Control System
ACV	Auto closing valve
AFC	Approved for construction
BC	Battery Chargers
C & I	Control and Instrumentation
CM	Configuration Management
COC	Certificate of Compliance -Required for all installations
CPM	Critical Path Method
CR	Control Room
DCS	Distributed Control System
Demin	Demineralised Water
DST	Demin Storage Tank
DVD	Digital Versatile Disk
EME	Exempted Micro-enterprise
EMP	Environmental Management Program
EMS	Environmental Management System
EPDM	Ethylene Propylene Diene Monomer
FAT	Factory acceptance test
FMECA	Failure Mode Effects and Criticality Analysis
HAZOP	Hazard and Operability
HMI	Human Machine Interface
I/O	Input / Output
I/P	Current to Pressure
IX	Ion Exchange

KKS	**Kraftwerk-Kennzeichen-System**
LAN	**Local Area Network**
LCD	**Liquid Crystal Display**
LCP	**Local control panel**
LCS	**Local Control Station**
LOP	**Local Operating Panel**
MB	**Mixed Bed**
MDL	**Master Document List**
MTTD	**Mean Time to Detection**
MTTR	**Mean Time to Repair**
NCR	**Non Compliance Report**
OBL	**Outside battery limits**
OEM	**Original Equipment Manufacturer**
OON	**Out Of Normal**
OP	**Outside Plant (All areas covered by this Works Information)**
OS	**Operating system**
PC	**Personal Computer**
PIS	**Plant Information System**
PLC	**Programmable Logic Controller**
Process LAN	**Process Local area network**
PSU	**Power supply unit**
PTFE	**Polytetrafluoroethylene**
QA	**Quality assurance**
QC	**Quality control**
QCP	**Quality Control Plan**
QMS	**Quality Management System**
RAID	**Redundant Array of Independent Disks**

RAM	**Random access memory**
SABS	**South African Bureau of Standards**
SAT	**Site Acceptance Test**
SCADA	**Supervisory Control and Data Acquisition**
SHEQ	**Safety Health Environment Quality**
SIT	**Site Integration Tests**
SOV	**Solenoid Operating Valve**
Station LAN	**Station Local area network**
TCP/IP	**Transmission Control Protocol/Internet Protocol**
TES	**Technical Evaluation Strategy**
TET	**Technical Evaluation Team**
UPS	**Uninterruptible Power Supply**
USB	**Universal Serial Bus**
VDSS	**Vendor Document Submittal Schedule**
VDU	**Visual Display Unit**
WBS	**Work Breakdown Structure**
WTP	**Water Treatment Plant**
WTPCR	**Water Treatment Plant Control Room**

2.5 ROLES AND RESPONSIBILITIES

As per 240-48929482: Tender Technical Evaluation Procedure in addition to the table below

Table 1: Defined Roles and Responsibilities

Compiler	The document compiler is responsible for ensuring that this document is up-to-date and that this document is not a duplication of an existing documentation, regarding the document's objectives and content.
Functional Responsibility (Middle Manager Facilities)	The Functional Responsible Person shall determine if the document is fit for purpose, before the document is submitted for authorisation.
Authoriser (Senior Manager)	The document authoriser is a duly delegated person with the responsibility to review the document for alignment to business strategy, policy, objectives and requirements. He/she shall authorise the release and application of the document.

2.6 PROCESS FOR MONITORING

240-48929482: Tender Technical Evaluation Procedure Related/Supporting Documents

2.7 RELATED/SUPPORTING DOCUMENTS

[1] C3.1 ECC 3 Blower Plant and Fuel Oil Plant Control System as per set Standards at Hendrina Power Station

[2] 380-HEN-AABB-D00138-14 Hendrina Refurb of Blower and S Fuel Oil Plant PLCs Tech Spec EoP Report Rev1.

3. TENDER TECHNCIAL EVALAUTION STRATEGY

3.1 TECHNICAL EVALUATION THRESHOLD

To ensure that the tenders are eligible for evaluation, the tenderer shall meet all the mandatory requirements as indicated in Table 4 and the strict adherence to the notes that have been detailed in section 3.4.

The evaluation of tenders will be based on the tenderer's ability to meet the requirements specified in the projects scope of work. A weighted score card approach will be used to evaluate the tenders against the Employer's requirements. Final Scores will be calculated and processed to produce an final score out of 5, as seen in Technical Evaluation Score Card.

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

Table 2: Technical Evaluation Score Card

SCORE	PERCENTAGE	DESCRIPTION
5	100	**COMPLIANT** • Tender meets mandatory criteria • Tender meets technical requirement(s)
4	80	**COMPLIANT WITH ASSOCIATED QUALIFICATIONS** • Tender meets mandatory criteria

		• Meet technical requirement(s)
2	40	**NON-COMPLIANT** • Tender meets mandatory criteria • Does not meet technical requirement(s) AND/OR; Unacceptable technical risk(s) AND/OR; • Unacceptable exceptions AND/OR; • Unacceptable conditions.

3.2 TET MEMBERS

Table 3: TET Members

TET number	TET Member Name	Designation
TET 1	Simphiwe Kubheka	C&I Senior Engineer
TET 2	Mahendra Latchminarain	C&I Engineering Manager (Acting)
TET 3	Yolanda Makhuhleni	C&I Senior Technician
TET 4	Blits Janse van Rensburg	C&I Advisor - Engineering
TET 5	Thandi Malobola	C&I Maintenance Manager (Acting)
TET 6		

3.3 MANDATORY TECHNICAL EVALUATION CRITERIA

In order to be eligible for evaluation the tenderer shall meet the following gatekeepers:

Table 4: Mandatory Technical Evaluation Criteria

	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Motivation for use of Criteria
1.	Pay rolled Certified PLC Specific Programmer	Supply proof of training attendance and completion Certificates. Indicating PLC brand and software specific training history. Certified test results and date of certification as obtained from the OEM after training was completed.	The Core of the project is based on the Upgrade of the Current Control system (PLC's). The Controls system should be migrated or developed from scratch. A programmer to resolve issues and support the project during development and the defects period is critical for the long term success of the project.
2.	Pay rolled Electrician that can issue Electrical certificate of Compliance	A certificate, with a unique number obtainable from the chief inspector and issued by a registered person in respect of an electrical installation or part of an electrical installation or a certificate of compliance issued under the Electrical Installation Regulations, 1992	Demonstrate compliance to required legal National Standards for Safety.
3.	Pay rolled Electrical Engineer that can sign-off on the Project documentation, Including drawings	Supply proof of professional registered Engineer with a unique number as provided by ECSA. Proof of registration certificate to be submitted	Demonstrate Competence to accept legal responsibility and accountability for the implementation of the project.

3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Notes to tenderer:

- An undertaking is required that resources identified would not be changed on award of the Contract.
- The CV's of Key Personnel should have experience which is comparable in nature to the Scope of the specified in this tender- PLC System Integration.
- Where no information is offered by the Tenderer, no points shall be scored.
- The Tender Returnable should be numbered and in the correct order as defined in sections n table 5 i.e. 1.1.a etc. Failure to do this will result in the tender to be excluded from the evaluations.

Table 5: Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
1.	**General Evaluation Criteria**			**30**	
	1.1	Company structure, Project planning, Background and experience of similar project completed as detailed in the scope of work for PLC Integration Services	a) Provide your Company's organogram and reporting structure (2.5) b) Provide a detailed "Project Implementation Plan" with a clear "step by step" (Method Statement) for implementing the required PLC implementation services as outlined in the scope of work without service interruptions. (2.5) c) Proof of implementation of similar contracts executed with the focus on duration. (2.5) d) Provide evidence of at least 2 reference letters of similar service provided. (2.5)		10 Company provides relevant and accurate documents detailing points (a) to (e) in the correct order (10%) Company documents are not in order, unclear or irrelevant, and have omissions. (0%)

	1.2	Communication	a) Describe your company communication process in managing customer complaints by means of a flow diagram. (5) b) Provide the communication method utilized by the business, e.g., email, meetings, group leaders (5)		10 Company provides relevant and accurate documents detailing points (a) and (b) in the correct order (10%) Company documents are not in order, unclear or irrelevant (0%)
	1.3	CV's of key personnel	a> Provide CV's including training/experience qualifications and portfolio of evidence of key personnel as specified below: • Electrical or Electronic Engineer overseeing the Project (2.5) • PLC programmer, project experience and certifications (2.5) • Project Manager and site supervisor experience and training (2.5) • Safety manager, training i.e. quality control systems, Safety control systems (2.5)		10 Company provides relevant and accurate documents detailing points (a) in the correct order (10%) Company documents are not in order, unclear or irrelevant (0%)
2.	**Control systems integration and project management**			**30**	
	2.1	**Provide a proposed business mobilisation plan for the following services as per the Scope of Work for**	Method statement for the following a) Site Evaluation (2) b) PLC Code Evaluation (4) c) Project implementation planning and Design (4) d) Procurement strategy (3)		20 Company provides relevant and accurate documents detailing points (a) to (h) in the correct order (20%)

			e) Waste management (2) f) Provide a method statement for Safety & Emergency preparedness (3) g) Provide an organogram of responsible persons for site operations (2)		Company documents are not in order, unclear or irrelevant and have omissions (0%)
	2.2	**After hours Emergency Response**	Please provide details / Standard operating procedure of your after-hours response plan for below and other: a) PLC Failures or Errors (4) b) Traveling arrangements (3) c) Component failures (3)		10 Company provides relevant and accurate documents detailing points a to e in the correct order (10%) Company documents are not in order, unclear or irrelevant (0%)
3.	**Quality, planning and Implementation**			**40**	
	3.1	System overview and interpretation of the Works and returnable	a> Provide a detailed software coding approach (method) based on the plants in question, System overview, layout, high level operating philosophy (4) b> List the Proposed PLCs components and supporting components, brands of components (3) c> A proposed network layout and integration. (Interface list) (Component list) (4) d> Highlight critical functions based on the application and scope (3) e> Indicate the Number of proposed I/O's based on the switchgear interface and the proposed upgrades and existing functions (3)		20 Company provides relevant and accurate documents detailing points a to f in the correct order (20%) Company documents are not in order, unclear or irrelevant (0%)

			f> List the critical fail safes (interlock list) (3)		
	3.2	Manufacturing and Quality control	a. List the Critical Hold points in the procurement, manufacturing, and testing phases of the Project Implementation plan. (2) b. Evidence of the scope of the Quality Management System: (2) One of the following: i. Quality Management Policy and a copy of ISO 9001:2008 certification; or ii. Quality Management Policy and a copy of Quality Manual that complies with ISO 9001 (latest), including compliance audit report; or iii. Quality Management Policy, a copy of Quality Manual and copies of the 6 mandatory ISO 9001 procedures (control of records, control of documents, control of non-conformances, corrective action, preventive action and audits); or iv. Quality Management Policy or Quality Management Statement, and c. Provide copies of applicable documented business processes/procedures (1)		5 Company provides relevant and accurate documents detailing points a - c in the correct order (5%) Company documents are not in order, unclear or irrelevant (0%)
	3.3	Factory Testing Methodology	Provide a clear method statement for the proposed factory acceptance testing for the project. List Typical test to be performed i.e. Hot start, Cold start, Power failures, Module failures, network Failures, I/O Failures.		5 Company provides relevant and accurate documents detailing requirement 3.3 (5%) Company documents are not in order, unclear or irrelevant (0%)

				TOTAL: 100	

3.5 TET MEMBER RESPONSIBILITIES

Table 6: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3	TET 4	TET n
1	X	x	X	X	x
2	X	x	X	X	x
3	X	X	X	X	X
Qualitative Criteria Number	**TET 1**	**TET 2**	**TET 3**	**TET 4**	**TET 5**
1.1	X	X	X	X	X
1.2	X	X	X	X	X
1.3	X	X	X	X	X
2.1	X	X	X	X	X
2.2	X	X	X	X	X
3.1	X	X	X	X	X
3.2	X	X	X	X	X
3.3	X	X	X	X	X

3.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.6.1 Risks

Table 7: Acceptable Technical Risks

Risk	Description
1.	**N/A**
2.	
3.	
4.	
5.	

Table 8: Unacceptable Technical Risks

Risk	Description
1.	**Company does not have a certified PLC Specialist on the payroll**
2.	**Company does not have an engineer that is professionally registered to sign-off designs and drawings**
3.	**Company does not understand the scope of work and the technical risks involved**
4.	**Company does not have a suitably accredited safety representative that can compile safety documents and support onsite activities**
5.	
6.	

3.6.2 Exceptions / Conditions

Table 9: Acceptable Technical Exceptions / Conditions

Risk	Description
1.	**N/A**
2.	

Table 10: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	**N/A**
2.	
3.	
4.	
5.	

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation	Signature
Mahendra Latchminarain	C&I Engineering Manager (Acting)	
Yolanda Makhuhleni	C&I Senior Technician	
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5. REVISIONS

Date	Rev.	Compiler	Remarks
September 2023	0	Simphiwe Kubheka	Compiled for the blower and fuel oil PLC refurbishment project

6. DEVELOPMENT TEAM

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

- Wayne Theunissen
- Simphiwe Kubheka

7. ACKNOWLEDGEMENTS

Mabel Nkosi - Assistant Officer: Document management