Eskom	Strategy	Kusile Power Station

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TABLES

1. INTRODUCTION

This document presents the tender technical evaluation strategy for Kusile Power Station Unit 1 to 6 Condensate Extraction Pump (CEP) Variable Speed Drives (VSD) room modification.

Unit 1 to 6 CEP VSD rooms are identical and situated adjacent the condensate pump auxiliary rooms and mostly covered in shade by the surrounding buildings and the overhead air-cooled water condensation system. Each CEP VSD room has a floor area of approximately 28.29m2, and 4.75m high. Each building consists of a grille with a filter on the inside, a roller-shutter door, and a steel personnel door. Each CEP VSD room is constructed on a concrete slab, with face brick walls and are covered with a concrete slab on the roof.

The CEP VSD installed on each room is an ABB variable speed drive unit that is rated at 2500 kVA, with a typical efficiency of 97%. The anticipated heat loads to be generated by a 2500 kVA VSD is estimated to be 75 kW.

The current Unit 1 to 6 CEP VSD room ventilation (extraction/exhaust) system is not adequate to keep the room temperatures below 40°C when ambient exceed 35°C and this has resulted to VSD failures due to high room temperatures. High ash content prevalence onsite causes filter to be often clogged resulting limited room air flow, which increases room temperatures above 40°C.

The CEP VSD rooms are to be modified to meet the VSD room temperature to 25ºC (± 5ºC) as detailed by requirements of Medium Voltage AC Variable Frequency Drives Standard (240-50237146).

2. SUPPORTING CLAUSES

2.1 SCOPE

The HVAC scope of Works, as detailed in this specification document, activity schedule and accompanying drawings; comprise of the engineering, the provision of all labour including materials and Contractor's equipment, manufacturing, supply, delivery, off-loading, hoisting, erection, testing, balancing and commissioning to serve, guarantee and maintenance after final completion of the air conditioning and ventilation installation.

The engineering, quality control, inspections, plant and material selection (where required), preparation of installation drawings (where required), testing, balancing, commissioning and preparation of operating and maintenance manuals, are to be managed and executed by the Contractor in a systematic manner as follows:

a) Each CEP VSD room is to be serviced by dedicated custom-built Direct Expansion (DX) industrial units and ducted air distribution system to control room temperatures to 25ºC (± 5ºC).
b) Associated Electrical *Works* for new HVAC system.
c) Associated controls and accessories for new HVAC system.
d) Associated Building, Civil and Structural *Works* for HVAC system.
e) Decommissioning and removal of all old equipment to allocated space at Kusile Power Station and make good where required for complete HVAC Works.
f) Re-testing, re-balancing and re-commissioning of the complete HVAC *Works.*
g) Provision of painting and corrosion protection for complete HVAC *Works*
h) Updating of the existing operation & maintenance manuals and provision of new where required
i) Update the plant codification & labelling and provide new where required for the complete *Works*
j) The Contractor makes provision for spares and maintenance support as per the requirements set out in this document.
k) Quality assurance.

l) The Contractor is to execute maintenance and maintenance management under the supervision of Employer for a period of 12 (twelve) months from the date of Taking over of the Works. The minimum intervals for the Contractor to be onsite for inspection and maintenance after taking-over of Works are to be 3, 6, 9 and 12 months respectively.

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. The technical evaluation strategy serves as basis for the tender technical evaluation process.

2.1.2 Applicability

This document is applicable to Kusile Power Station Unit 1 to 6 Condensate Extraction Pump (CEP) Variable Speed Drives (VSD) room modification.

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] 32-1034: Eskom Procurement Policy

[3] KUS-202208143: Kusile Power Station CEP VSD Room Modification Project Technical Specifications

2.2.2 Informative

[4] ISO 9001: Quality Management Systems.

2.3 DEFINITIONS

N/A

2.3.1 Classification

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

2.4 ABBREVIATIONS

Abbreviation	Description
CBMS	Central Building Management System
CEP	Condensate Extraction Pump
CoC	Certificate of Completion
C&I	Control & Instrumentation

Abbreviation	Description
CV	Curriculum Vitae
DX	Direct Expansion
ECSA	Engineering Council of South Africa
HVAC	Heating, Ventilation, and Air Conditioning
KKS	Kraftwerk-Kenzeichnungs System
ISO	International Organisation for Standardisation
ITP	Inspection Test Plans
OEM	Original Equipment Manufacturers (OEMs
O&M	Operations and Maintenance
TET	Technical Evaluation Team
VSD	Variable Speed Drive
QCP	Quality Control Plans

2.5 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 (CoE Manager)	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.
Lead Discipline Engineers	Provide input to the technical tender evaluation strategy and associated engineering activities.
Configuration Management Lead	Is accountable for ensuring that the engineering documentation, engineering systems and databases are correctly configured. As part of this role, the Configuration Practitioner is responsible for the development of the configuration management plan; configuration and management of the PBS and the management of plant item Tags.

2.6 PROCESS FOR MONITORING

The primary process for monitoring will be governed by Design Review Procedure (240-53113685), this entails assuring that the design achieves the requirements set out in this document. Any changes to this document will be performed as per Project Engineering Change Management Procedure (240-53114026).

2.7 RELATED/SUPPORTING DOCUMENTS

Please refer to Section 2.2.

3. TENDER TECHNICAL EVALUATION STRATEGY

3.1 TECHNICAL EVALUATION THRESHOLD

Mandatory Technical Evaluation Criteria (gatekeepers) are 'must meet' criteria. These criteria shall not be weighted, or point scored but 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.

Qualitative Technical Evaluation Criteria are weighted evaluation criteria used to identify the highest technically ranked tenderer after determining that all the Mandatory Evaluation Criteria have been met. The Qualitative Evaluation Criteria are weighted to reflect the relevant importance of each criterion.

The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 70%. The following scoring method will be used:

Table 1: Technical Scoring Methodology

SCORE	PERCENTAGE (%)	DESCRIPTION
5	100	**COMPLIANT** • Meet the technical requirement(s) AND, • No foreseen technical risk(s) in meeting technical requirements
4	80	**COMPLIANT WITH ASSOCIATED QUALIFICATIONS** • Meet the technical requirement(s) with, • Acceptable technical risks AND/OR; • Acceptable exceptions AND/OR; • Acceptable conditions
2	40	**NON-COMPLIANT** • Does not meet the technical requirement(s) AND/OR Unacceptable technical risk(s) AND/OR; • Unacceptable exceptions AND/OR; • Unacceptable conditions
0	0	**TOTALLY DEFICIENT/NON-RESPONSIVE**

3.2 TET MEMBERS

From each Engineering Discipline a professional registered Engineer/Technologist and one other member is to be part of the evaluation team.

Table 2: TET Members

TET number	TET Member Name	Designation
TET 1	Kunaal Dharamraj	HVAC Engineer
TET 2	Nhlanhla Rikhotso	Senior Mechanical Engineer
TET 3	Gomotso Phokojoe	Electrical Engineer
TET 4	Lelethu Thipa	Civil/Structural Engineer
TET 5	Mpume Mthethwa	Project co-ordinator Tech

3.3 MANDATORY TECHNICAL EVALUATION CRITERIA

Table 3: Mandatory Technical Evaluation Criteria

	Mandatory Technical Criteria Description	Reference to Technical Specification / Tender Returnable	Motivation for use of Criteria
1	Background and Experience of similar completed projects that includes, as a minimum, the following: Integrated multidisciplinary design of all relevant engineering disciplines (HVAC, electrical, C&I, civil, structural, building etc), construction / modification / installation, certification commissioning and testing of HVAC systems for industrial environments eg. The relevant industrial environments include • Power stations • Data centers • LV/HV switchgear rooms • Battery rooms • Server rooms • Control rooms • Equipment rooms eg VSD rooms	Provide testimonial certificates or completion certificates of at least five (5) Multidisciplinary Projects completed in the last 10 years similar to the scope of work. The testimonial certificates or completion certificates shall consist of the following information: a) Name of company where project was executed b) Project Description c) Construction period d) Verifiable reference (Contact person, Tel/Cel/e-Mail/Address) **Note 1:** Appointment letters and/or task orders will not be considered. **Note 2:** If the primary contractor subcontracts design work or any other work, a letter indicating the relationship between the contractors must be submitted. Only then will they be evaluated. **Note 3:** If the project description is not provided or not comparable to the SoW (integrated multidisciplinary, the testimonial or completion certificate will not be considered. **Note 4:** The tenderer must populate the above information as per Table 10	Contractor with no relevant prior experience on projects of sufficient scale is an unacceptable risk
2	Provide ECSA registered professional engineers/technologists in the following fields • Mechanical Engineering	Certified copy of ECSA certificate Certified ID copies	Regulatory requirement as per Engineering Council of South Africa for anyone performing design work

	• Electrical Engineering • Civil Engineering		

3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

The weight for the technical review will be 100% with a minimum threshold of 70% and will be based on the following:

Table 4: Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Scoring Criteria	Criteria Weighting (%)	Criteria Sub Weighting (%)
1.	**Engineering of the complete HVAC Works and Construction Supervision**				**30**	
	1.1	1-off Professional Registered Mechanical Technologist/ Engineer with a track record of 5 completed projects (post ECSA registration) as a minimum; for design, construction, and commissioning of HVAC systems in any of the following • Power Stations • Data centers • LV/HV switchgear rooms • Battery rooms • Server rooms • Control Rooms	• CVs of key personnel – tenderer demonstrates level of related design and construction experience • Certified ID copies of key personnel • Certified copies of ECSA certificate • List of 5 completed projects for design, construction and commissioning of HVAC systems in the relevant industrial environments (All certified documents must not be more than 3 months old)	5 = 100% Formal Mechanical BSc/Btech qualification or equivalent international acknowledgement and has 5 or more completed projects. 4 = 80% Formal Mechanical BSc/Btech qualification or equivalent international acknowledgement but has 4 completed projects 2 = 40% Formal Mechanical BSc/Btech qualification or equivalent international acknowledgement, but has 3 completed projects. 0 = 0% Has less than 3 completed projects and no formal		50

		• Equipment rooms such as VSD rooms		Mechanical BSc/Btech qualification or equivalent international acknowledgement or uncertified documents		
	1.2	1-off Professional Registered Electrical Technologist/ Engineer (Post ECSA registration) with a track record of 5 completed projects as a minimum; for design, construction, and commissioning of Electrical systems in Power Station or building services environment.	• CVs of key personnel – tenderer demonstrates level of related design and construction experience • Certified ID copies of key personnel • Certified copies of ECSA certificate • List of 5 completed projects for design, construction and commissioning of Electrical systems in Power Stations or building services environment (All certified documents must not be more than 3 months old)	5 = 100% Formal Electrical BSc/Btech qualification or equivalent international acknowledgement and has 5 or more completed projects. 4 = 80% Formal Electrical BSc/Btech qualification or equivalent international acknowledgement but has 4 completed projects 2 = 40% Formal Electrical BSc/Btech qualification or equivalent international acknowledgement, but has 3 completed projects. 0 = 0% Has less than 3 completed projects and no formal Electrical BSc/Btech qualification or equivalent international acknowledgement or uncertified documents		25
	1.3	1-off Professional Registered Civil or Structural Technologist /Engineer with a track record minimum of 3-5	• CVs of key personnel – tenderer demonstrates level of related design and construction experience	5 = 100% Formal Civil BSc/Btech qualification or equivalent international acknowledgement		25

		years post ECSA Registration in Design and construction of Civil and Structural Works in Power Station or building services environment or related projects	• Certified ID copies of key personnel • Certified copies of ECSA certificate (All certified documents must not be more than 3 months old)	and has 5 or more years of experience 4 = 80% Formal Civil BSc/Btech qualification or equivalent international acknowledgement and has 2-3 years experience 2 = 40% Formal Civil BSc/Btech qualification or equivalent international acknowledgement and has less than 2 years experience 0 = 0% Has less than 2 years experience and no formal Civil BSc/Btech qualification or equivalent international acknowledgement or uncertified documents		
2.	**Method statement**				**30**	
	Technical proposal that meets requirements of project scope		Technical proposal to include the following as a minimum: a) Understanding of the scope of work as detailed by the technical specification. b) Proposed approach and methodology which includes deliverables, and resource plan, however not limited to. Indicate by general design/construction approach and method statements how the contractor will perform the work for each sub-system of	5 = 100% Excellent response which demonstrates the ability to deliver the service far more than minimum requirements. 4 = 80% Good response detailing clearly how the service will be delivered above and beyond the minimum requirements.		100

		the works (HVAC, Electrical, BMS and Building related works). c) Tenderer confirms compliance to the full scope of work and Technical Specification for the Works via submission of a signed letter with the company's letterhead.	2 = 40% Barely adequate levels of required scope proposal. 0 = 0% Less than minimum level of required scope proposal or irrelevant and/or missing scope of work compliance letter		
3.	**Experience of key project staff**			**20**	
	The tenderer demonstrates the level of experience of key project personnel. The minimum required project personnel includes the following 1. Project manager with 3-5 years experience	• CVs of key personnel – tenderer demonstrates relevant required experience • Certified ID copies of key personnel (All certified documents must not be more than 3 months old) • Certified relevant qualifications (minimum N. Diploma)/competency certificates of key personnel.	5 = 100% - Work experience is 5 years or more. - There are no foreseen technical risks in meeting the technical requirements 4 = 80%: - Work experience is 3 years or more. - There is acceptable technical risk(s) in meeting project requirements AND/OR; acceptable exceptions 2 = 40%:		15

			- Work experience is less than 3 years related work experience. - There is unacceptable technical risk(s) in meeting the project requirements AND/OR; unacceptable exceptions 0 = 0%: Totally deficient OR Non-responsive (missing requested documents)		
	2. Electrician registered with the Department of Labour with 3-5 years experience	• CVs of key personnel – tenderer demonstrates relevant required experience • Certified ID copies of key personnel (All certified documents must not be more than 3 months old) • Certified relevant qualifications (minimum N. Diploma)/competency certificates of key personnel. As a minimum the following certificates must be provided ➢ Master installation registration certificate for electrician (both back and front of licence card and must be legible)	5 = 100% - Work experience is 5 years or more. - There are no foreseen technical risks in meeting the technical requirements 4 = 80%: - Work experience is 3 years or more. - There is acceptable technical risk(s) in meeting project requirements AND/OR;		15

			acceptable exceptions 2 = 40%: - Work experience is less than 3 years related work experience. - There is unacceptable technical risk(s) in meeting the project requirements AND/OR; unacceptable exceptions 0 = 0%: Totally deficient OR Non-responsive (missing requested documents)		
	3. Site manager with HVAC experience with 3-5 years related experience	• CVs of key personnel – tenderer demonstrates relevant required experience • Certified ID copies of key personnel (All certified documents must not be more than 3 months old) • Certified relevant qualifications (minimum N. Diploma)/competency certificates of key personnel. As a minimum the following certificates must be provided	5 = 100% - Work experience is 5 years ore more. - There are no foreseen technical risks in meeting the technical requirements 4 = 80%: - Work experience is 3 years or more.		15

		➢ Trade test certificate for site manager	- There is acceptable technical risk(s) in meeting project requirements AND/OR; acceptable exceptions 2 = 40%: - Work experience is less than 3 years related work experience. - There is unacceptable technical risk(s) in meeting the project requirements AND/OR; unacceptable exceptions 0 = 0%: Totally deficient OR Non-responsive (missing requested documents)		
	4. HVAC technician with 3-5 years experience	• CVs of key personnel – tenderer demonstrates relevant required experience • Certified ID copies of key personnel (All certified documents must not be more than 3 months old)	5 = 100% - Work experience is 5 years ore more. - There are no foreseen technical risks in meeting the technical requirements		15

		• Certified relevant qualifications (minimum N. Diploma)/competency certificates of key personnel. As a minimum the following certificates must be provided ➢ HVAC trade test and SAQCC gas certification for HVAC technician/technicians	4 = 80%: - Work experience is 3 years or more. - There is acceptable technical risk(s) in meeting project requirements AND/OR; acceptable exceptions 2 = 40%: - Work experience is less than 3 years related work experience. - There is unacceptable technical risk(s) in meeting the project requirements AND/OR; unacceptable exceptions 0 = 0%: Totally deficient OR Non-responsive (missing requested documents)		
	5. Project planner with 3-5 years experience	• CVs of key personnel – tenderer demonstrates relevant required experience	5 = 100% - Work experience is 5 years ore more.		15

		• Certified ID copies of key personnel (All certified documents must not be less than 3 months old) • Certified relevant qualifications (minimum N. Diploma)/competency certificates of key personnel.	- There are no foreseen technical risks in meeting the technical requirements 4 = 80%: - Work experience is 3 years or more. - There is acceptable technical risk(s) in meeting project requirements AND/OR; acceptable exceptions 2 = 40%: - Work experience is less than 3 years related work experience. - There is unacceptable technical risk(s) in meeting the project requirements AND/OR; unacceptable exceptions 0 = 0%: Totally deficient OR Non-responsive (missing requested documents)		

	6. Safety officer with 3-5 years experience	• CVs of key personnel – tenderer demonstrates relevant required experience • Certified ID copies of key personnel (All certified documents must not be less than 3 months old) • Certified relevant qualifications (minimum N. Diploma)/competency certificates of key personnel.	5 = 100% - Work experience is 5 years ore more. - There are no foreseen technical risks in meeting the technical requirements 4 = 80%: - Work experience is 3 years or more. - There is acceptable technical risk(s) in meeting project requirements AND/OR; acceptable exceptions 2 = 40%: - Work experience is less than 3 years related work experience. - There is unacceptable technical risk(s) in meeting the project requirements AND/OR; unacceptable exceptions 0 = 0%:		10

			Totally deficient OR Non-responsive (missing requested documents)		
	7. Quality Control Inspector with HVAC experience and 3-5 years experience	• CVs of key personnel – tenderer demonstrates relevant required experience • Certified ID copies of key personnel (All certified documents must not be more than 3 months old) • Certified relevant qualifications (minimum N. Diploma)/competency certificates of key personnel.	5 = 100% - Work experience is 5 years ore more. - There are no foreseen technical risks in meeting the technical requirements 4 = 80%: - Work experience is 3 years or more. - There is acceptable technical risk(s) in meeting project requirements AND/OR; acceptable exceptions 2 = 40%: - Work experience is less than 3 years related work experience. - There is unacceptable technical risk(s) in meeting the project requirements AND/OR;		15

				unacceptable exceptions 0 = 0%: Totally deficient OR Non-responsive (missing requested documents)		
4.	**General**				**20**	
	4.1	Proposed work plan • Indicating intent to undertake full scope of work whilst Kusile remains live. • Activities divided up realistically in schedule • Timelines realistic for execution of activity	Preliminary Project schedule showing key deliverable dates and Proposed Work plan indicating intent to undertake full scope of work whilst Kusile Power Station remains live.	5 = 100% All three conditions of proposed work plan have been met. 4 = 80% Only two conditions of proposed work plan have been met. 2 = 40% Only one condition of proposed work plan has been met. 0 = 0% None of conditions of proposed work plan have been met.		50
	4.2	Provide a Quality Control Plan for the project	Preliminary Quality Control plan to be provided by the tenderer. As a minimum the QCP must contain the design, manufacturing, commissioning and testing points. The relevant Intervention, Hold, Verify, Review and Witness points must be included	5 = 100% QCP provided that's meet all requirements 2 = QCP is brief and not aligned with project requirements 0 = QCP not submitted		50

					TOTAL: 100	

3.5 TET MEMBER RESPONSIBILITIES

Table 5: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3	TET 4	TET 5
1. Background and experience of similar projects	X	X	X	X	X
2. ECSA registered engineers	X	X	X	X	X
Qualitative Criteria Number	**TET 1**	**TET 2**	**TET 3**	**TET 4**	**TET 5**
1. Engineering of the complete HVAC Works and Construction Supervision					
1.1. 1-off Professional Registered Mechanical Technologists/ Engineers	X	X	X	X	X
1.2. 1-off Professional Registered Electrical Technologist/ Engineer	X	X	X	X	X
1.3. 1-off Professional Registered Civil or Structural Technologist	X	X	X	X	X
2. Method statement	X	X	X	X	X
3. Experience of Key staff	X	X	X	X	X
4. General					
4.1 Proposed work plan	X	X	X	X	X
4.2 QCP	X	X	X	X	X

X – Required Attendance

O – Optional

3.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.6.1 Risks

Table 6: Acceptable Technical Risks

Risk	Description
1.	**Alternative solutions with the same or better performance**

Table 7: Unacceptable Technical Risks

Risk	Description
1.	**Exclusions of scope specified in the employers requirements**
2.	**Unclear staff organogram. i.e. the staffing plan is weak not showing clarity in allocation of tasks and responsibilities**
3.	**Exclusion of a project specific schedule**
4.	**No HVAC experience with Site Manager and Quality Control Inspector**

3.6.2 Exceptions / Conditions

Table 8: Acceptable Technical Exceptions / Conditions

Risk	Description
1.	**Accept deviation with technical qualification**

Table 9: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	**Deviation without technical qualification not accepted**

4. AUTHORISATION

This document has been seen and accepted by:

Name & Surname	Designation
Kunaal Dharamraj	HVAC Engineer
Nhlanhla Rikhotso	Senior Mechanical Engineer
Busi Nkomo	Auxiliary Engineering Manager
Collin Lepee	Senior Technologist Engineer - Electrical
Lelethu Thipa	Civil Engineer
Mpume Mthethwa	Project co-ordinator Tech

5. REVISIONS

Date	Rev.	Compiler	Remarks
January 2025	1	K. Dharamraj	Reviewed and changed technical evaluation

6. DEVELOPMENT TEAM

All Technical Evaluation Team Members, as listed in Table 1, were involved with the development of this document.

7. ACKNOWLEDGEMENTS

N/A.

8. APPENDICES

In addition to the Tender Technical Evaluation Strategy and other related documents applicable to the Contract, the following appendices are issued by the employer, for the tenderer complete to with the relevant information.

Qualitative Criteria Point 1: The tenderer to provide testimonial certificates or completion certificates of at least five (5) Multidisciplinary Projects similar to the scope of work

Table 10: Background and Experience of Similar Completed

Client/Customer Details	Track Record Description				Comment
Name of company where project was executed (Customer/Client name)	**Project Description**	**Construction Period**	**Contract Value (in Rands)**	**Verifiable Reference (Contact person) (Tel/Cel/Mail/Address)**	**Any additional Comments**