Eskom	Strategy	Kusile Power Station

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1. Introduction

Digital transformation presents a paradigm shift in how power generation assets are designed, operated, and maintained. The implementation of comprehensive digital ecosystems in power generation through the analytical lens of the Smart Plant Initiative framework, using Kusile Power Station remains critical in addressing effectiveness of maintenance, operational and safety practices applicable in the power generation environment.

This document outlines the Technical Evaluation Strategy and Criteria for assessing potential service providers for the Kusile Smart Plant Initiative. The objective is to establish a structured, objective, and transparent framework for evaluating technical proposals, ensuring that the selected vendor possesses the requisite expertise, experience, and proposed solutions to successfully implement all five technology pillars of the Smart Plant vision, which are completely integrated. This strategy will guide the technical evaluation committee in scoring proposals, ultimately leading to the selection of a partner capable of delivering a robust, scalable, and secure digital ecosystem.

2. Supporting Clauses

2.1 Scope

This strategy applies to the technical evaluation phase of the procurement process for the Kusile Smart Plant Initiative, covering all aspects of the proposed solutions across the five technology pillars, i.e.:

1. Network and Infrastructure

   The network establishes the foundational connectivity layer that enables all other smart plant technologies. This includes industrial-grade wireless networks, secure backhaul connectivity, and comprehensive cybersecurity measures aligned with IEC 62443 standards. The service provider must design and implement a robust, secure, and scalable industrial network infrastructure capable of supporting all new and future smart technologies. At the infrastructure level, the private cloud platform should integrate computing, storage, and networking into a centralised cloud architecture, enabling flexible resource allocation and reducing hardware investment. With high availability and disaster recovery capabilities, it ensures continuous operation of mission-critical power generation systems while standardising IT management and simplifying operations.

2. Intelligent Inspection and Digital Interaction

   The Intelligent Inspection section specifies the technical and functional requirements for sensing devices, AI analytics algorithms, the intelligent inspection system, and the Intelligent Operations Centre (IOC). The Digital Integration section specifies the technical and functional requirements for smart safety helmets, video and voice collaboration systems, and intelligent meeting terminals.

3. Digital Twin Interface Integration

   The Digital Twin Interface ensures seamless interoperability between all smart plant technologies and the existing Digital Twin. There must be standardised data formats, ensuring low-latency data synchronisation, and enables the Digital Twin to leverage real-time plant data for advanced predictive analytics and optimisation. All proposed technologies must be designed for seamless interoperability with the existing Digital Twin developed in collaboration with EPRI Program 224.

4. Paperless Operations/Digitalized Routine Work Management

   The Paperless Operations pillar transforms maintenance workflows from paper-based processes to fully digital, mobile-first operations. This includes a custom mobile application for maintenance teams, bi-directional integration with SAP PM and MM modules, and digitalised outage

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management capabilities. This pillar directly impacts operational efficiency by reducing work order cycle time, improving data accuracy, and providing real-time visibility into maintenance activities. The solution must fully digitalise the Routine Work Management process, from work order creation to close-out, with seamless integration to the existing Enterprise Resource Planning (ERP) system.

5. Digitization of Existing Plant Documents and Data Books

   This section specifies the requirements for document scanning, optical character recognition (OCR), metadata tagging, quality assurance, and the deployment of an Enterprise Document Management System (EDMS).

2.1.1 Purpose

The purpose of this tender technical evaluation strategy is to provide a standardised methodology for the technical assessment of vendor proposals, ensuring alignment with the project's strategic objectives, technical requirements, and long-term sustainability goals.

2.1.2 Applicability

This document applies to the Generation 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] KUS-20251198: Functional Specification Design: Kusile Power Station Smart Plant Digitalisation

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	Meaning given to the abbreviation
AI	Artificial Intelligence
EDMS	Enterprise Document Management System
ERP	Enterprise Resource Planning
ICT	Information and Communication Technology

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IOC	Intelligent Operations Centre
OCR	Optical Character Recognition
TET	Technical Evaluation Team

2.5 Roles And Responsibilities

As per Tender Technical Evaluation Procedure

2.6 Process For Monitoring

N/A

2.7 Related/Supporting Documents

N/A

3. Tender Technical Evaluation Strategy

3.1 Technical Evaluation Threshold

To qualify technically, a tenderer must meet all Mandatory Technical Evaluation Criteria. Failure to meet any mandatory requirement will result in disqualification from further technical evaluation. Tenderers that satisfy all mandatory criteria will then be assessed against the Qualitative Technical Evaluation Criteria and must achieve a minimum weighted score of 75% to pass the technical evaluation.

3.2 TET Members

Table 1: TET Members

TET number	TET Member Name	Designation
TET 1		
TET 2		
TET 3		
TET 4		
TET 5		
TET 6		
TET 7		
TET 8		
TET 9		
TET 10		

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3.3 Mandatory Technical Evaluation Criteria

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 or not. An assessment of ‘No’ against any criterion shall technically disqualify the tenderer and shall not be further evaluated against Qualitative Criteria.

Note: The technical evaluation shall be conducted in accordance with the requirements and evaluation criteria specified in Annexure A - Technical Evaluation Criteria. Tenderers shall complete and submit all information and supporting documentation required under Annexure A for evaluation.

3.4 Qualitative Technical Evaluation Criteria

The technical evaluation shall be conducted in accordance with the requirements and evaluation criteria specified in Annexure A - Technical Evaluation Criteria.

Tenderers shall complete and submit all information and supporting documentation required under Annexure A for evaluation.

The scoring method for Qualitative Technical Evaluation Criteria will be as shown Table 2

Table 2: Qualitative Evaluation Criteria Scoring

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**

Completed Technical Requirements Form : The evaluation of technical proposals will be based on the scoring results outlined in the technical scoring table above. The score for each category will be calculated by multiplying the average score of its sub-criteria by the category's weighting. The total technical score will be the sum of all weighted category scores.

Final Scores and Ranking: The total weight for Qualitative Technical Evaluation Criteria is **100%.** For a tenderer to be recommended for further commercial evaluation the tenderer must achieve a minimum threshold of **75%**.

Note: The qualifying bidders shall be required to demonstrate a successfully implemented and operational solution at a live power generation facility, or through a comprehensive virtual demonstration of an equivalent deployed solution. Failure to satisfactorily demonstrate the solution and its required functionality shall result in disqualification of the submission.

3.5 TET Member Responsibilities

Table 3: 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	X	X	X					
2	X	X	X	X	X					
3	X	X	X	X	X					
4	X	X	X	X	X					
5	X	X	X	X	X					
6		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**
Schedule	X						X			X
Pillar 1	X	X	X	X	X				X	
Pillar 2	X	X	X	X	X				X	
Pillar 3	X	X	X	X	X					
Pillar 4	X	X	X	X	X					
Pillar 5	X	X	X	X	X			X		

3.6 Foreseen Acceptable / Unacceptable Qualifications

3.6.1 Risks

Table 4: Acceptable Technical Risks

Risk	Description
1	1: COMPLIANT: Meets all applicable sub-criteria
2	1: COMPLIANT: Meets all applicable sub-criteria
3	1: COMPLIANT: Meets all applicable sub-criteria
4	1: COMPLIANT: Meets all applicable sub-criteria
5	1: COMPLIANT: Meets all applicable sub-criteria
6	1: COMPLIANT: Meets all applicable sub-criteria
7	1: COMPLIANT: Meets all applicable sub-criteria

Table 5: Unacceptable Technical Risks

Risk	Description
1	0: NON-COMPLIANT 0: TOTALLY DEFICIENT OR NON-RESPONSIVE
2	0: NON-COMPLIANT 0: TOTALLY DEFICIENT OR NON-RESPONSIVE
3	0: NON-COMPLIANT 0: TOTALLY DEFICIENT OR NON-RESPONSIVE
4	0: NON-COMPLIANT 0: TOTALLY DEFICIENT OR NON-RESPONSIVE
5	0: NON-COMPLIANT 0: TOTALLY DEFICIENT OR NON-RESPONSIVE

6	0: NON-COMPLIANT 0: TOTALLY DEFICIENT OR NON-RESPONSIVE
7	0: NON-COMPLIANT 0: TOTALLY DEFICIENT OR NON-RESPONSIVE

3.6.2 Exceptions / Conditions

Table 6: Acceptable Technical Exceptions / Conditions

Risk	Description
1.	None

Table 7: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	Amendment of the scope. No alternative scope will be accepted.

4. Authorisation

This document has been seen and accepted by:

Name	Designation

5. Revisions

Date	Rev.	Compiler	Remarks

6. Development Team

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

7. Acknowledgements

N/A

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