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Date:23/06/2025.....

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**Tender Technical Evaluation Strategy for Grootvlei Power
Station Operator Training Simulator Replacement Project**

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**Tender Technical Evaluation Strategy for Grootvlei Power
Station Operator Training Simulator Replacement Project****1. INTRODUCTION**

Power plant operator training simulators are critical tools for developing, declaring and enhancing operator competencies. Engineering simulators provide the power plant engineers a tool to simulate planned plant modifications and predict their potential impacts on the process, while also enhancing the engineer's understanding of the overall plant's behaviour and design. For effective training and accurate plant simulations, the operator training and engineering simulators are required to have the following functionality:

- a. Provide realistic plant conditions and training scenarios.
- b. Be an accurate reflection of the actual reference plant and control room.
- c. Simulate realistic plant behaviour.
- d. Are the high degree of exactness simulators.

Power plant simulators do however vary widely from station to station and therefore the needs of the end-user should be considered and incorporated by ensuring it is thoroughly defined and documented.

The current simulator is in the non-functional state and in addition, the OEM of the currently installed Operator Training Simulator (OTS) has indicated that this system has reached its end of life and has no technical support. Given these challenges, the training department has not been able to perform any of the training scenarios. This is impacting on the development of operators as they are unable to perform refresher training, conduct or replicate the real plant scenarios as part of operational experience, this presents a risk of increased unit trips due to operator error. C&I Engineers are also unable to implement and test system changes on the OTS system before making permanent changes on the running units. In order to mitigate this risk, the current operator training simulator will need to be replaced with a new, properly supported and functioning system that will improve the training environment for the operators.

2. SUPPORTING CLAUSES**2.1 SCOPE**

The scope of this document is to capture the tender technical evaluation strategy for Grootvlei Power Station Operator Training Simulator Replacement Project.

2.1.1 Purpose

The purpose of this tender technical evaluation strategy is to define the Mandatory Evaluation Criteria, Qualitative Evaluation Criteria and TETM 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 the Grootvlei Operator Training Simulator Replacement Project only.

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] 240-109836084 Procurement Strategy Dual & Triple Adjudication (R10m to R300m)
- [3] 240-106871290 Technical Evaluation Team Member Appointment Letter Template (Rev 2)
- [4] ISO 9001 Quality Management Systems

2.2.2 Informative

- [5] GVL/0216 Required Operational Capability: Design and Installation of New Operator Simulator

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- [6] GVL/0582 Engineering Management Plan for Grootvlei Operator Training Simulator Replacement Project
- [7] GVL/0583 Stakeholder Requirements Definition for the replacement of Operator training simulator
- [8] GVL/0584 Technical Specification for operator training simulator replacement.

2.3 DEFINITIONS

Definition	Description
Enquiry	Refers to written or electronic documents which describe the business need for goods / works/ services that invite suppliers to submit a quote or tender (bid) to meet the business need. This includes competitive and non-competitive enquiries.
Contracting strategy	Strategy to define and allocate the scope of supply to work packages / jobs (insourcing and outsourcing) and to select the most appropriate form of contract thereto (Workgroup).
Tender (Bid)	Refers to a written or electronic offer, tender, bid, quotation or proposal made by a supplier, in a prescribed form according to the issued enquiry, for the provision of assets, goods, works or services, and/or disposals (Investment Recoveries).
Contracting strategy	Strategy to define and allocate the scope of supply to work packages / jobs (insourcing and outsourcing) and to select the most appropriate form of contract thereto (Workgroup).

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
CFT	Cross Functional Team
DCS	Distributed Control System
EDWL	Engineering Design Work Lead
LDE	Lead Discipline Engineer
OEM	Original Equipment Manufacturer
OTS	Operator Training Simulator
SME	Subject Matter Expert
TETM	Technical Evaluation Team Member

2.5 ROLES AND RESPONSIBILITIES

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

2.6 PROCESS FOR MONITORING

Not Applicable

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**Tender Technical Evaluation Strategy for Grootvlei Power
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None

3. TENDER TECHNICAL EVALUATION STRATEGY**3.1 TECHNICAL EVALUATION METHOD**

The basic steps for a technical evaluation must be followed as per the Generation Tender Technical Evaluation Procedure **Error! Reference source not found..**

A two stage Technical Evaluation Strategy is set out.

Stage 1: Mandatory Technical Evaluation Criteria (gatekeepers) are 'must meet' criteria. These criteria are not weighted, or point scored but are assessed on a Yes/No basis to ascertain whether or not the criteria are met. An assessment of 'No' against any mandatory criterion will disqualify the tenderer and the tenderer will not be evaluated against Qualitative Criteria.

Stage 2: Qualitative Technical Evaluation Criteria are weighted evaluation criteria used to identify the highest technically ranked tenderer. The Qualitative Evaluation Criteria are weighted to reflect the relevant importance of each criterion.

3.2 TECHNICAL EVALUATION THRESHOLD

Due to scope split and obligation falling on Eskom to appoint different subsystems to different suppliers, the minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 75%.

A weighted score-card approach is used to evaluate the technical compliance of the tenders against the technical specifications. Tenderers need to have a weighted score of 75% overall or more to technically qualify for the targeted subsystem further evaluation.

The evaluation strategy for Safety, Health and Environmental as well as Quality is not included in this document as it does not form part of the technical scope.

The evaluation of the tender submission will be based on the tenderer's ability to meet the technical requirements.

The Technical requirements are further broken down into **NUMBER OF SIMILAR SERVICES, METHOD STATEMENT (TECHNICAL PROJECT PROPOSAL), LICENSE AGREEMENTS WITH THE DCS OEM, RELEVANT QUALIFICATIONS AND EXPERIENCE, ORGANISATION ORGANOGRAM, ESTABLISHED RELATIONSHIP WITH LOCAL ENTITIES, PROVISION OF A LEVEL 2 PROJECT PROGRAMME AND MEET SIMULATOR FUNCTIONAL DESIGN SPECIFICATION** with the weighted score breakdown for each Qualitative Criteria indicated in Table 1.

Table 1: Overall Weighted Score Breakdown per Qualitative Criteria

Discipline	Overall Weighted Score (%)
NUMBER OF SIMILAR SERVICES	15
METHOD STATEMENT (TECHNICAL PROJECT PROPOSAL)	15
LICENSE AGREEMENTS WITH THE DCS OEM	10
RELEVANT QUALIFICATIONS AND EXPERIENCE	10
ORGANISATION ORGANOGRAM	5
ESTABLISHED RELATIONSHIP WITH LOCAL ENTITIES	10

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PROVISION OF A LEVEL 2 PROJECT PROGRAMME	5
MEET SIMULATOR FUNCTIONAL DESIGN SPECIFICATION	30
Total Score	100

The scoring method will be as stipulated in **Error! Reference source not found..**

3.3 TET MEMBERS

TET number	TET Member Name	Designation
TETM 1		Chief Technologist: Grootvlei PS
TETM 2		Chief Technologist: Gx Engineering C&I
TETM 3		Senior Manager: Generation Engineering C&I
TETM 4		Generation Corporate Specialist: C&I

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3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Table 2: Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	<u>Scoring Criteria</u>
1.	NUMBER OF SIMILAR SERVICES			15	
	Number of similar services related to the engineering and provision of fully functional operator simulator previously undertaken. Provide proof of the similar services in the form of previous orders or completion certificates within the past three years. Note: Note: <i>Tenderer</i> provides a list of verifiable relevant references (As a minimum, reference list must contain Brief Description of Services, even in commercial, business or other industries, Valid contact details (to verify if service were acceptable and delivered on time)).				
	1.1	x>=5 similar services submitted and verified to be acceptable and are within the past 5 years = 5			
	1.2	2 similar services submitted and verified to be acceptable and are within the past 5 years = 4			
	1.3	1 similar service submitted and verified to be acceptable and is within the past 5 years OR 1 or more similar service referenced and older than five years OR not in industrial environment, but commercial environment = 2			
	1.4	No similar service submitted and verified to be acceptable = 0			0
2.	METHOD STATEMENT (TECHNICAL PROJECT PROPOSAL)			15	
	In depth Method Statement (Technical Project Proposal) indicating how the scope of work is to be successfully achieved in order to meet the project deliverables as per the technical specifications. The <i>Tenderer</i> needs to furnish in their proposal the following:				

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		<ul style="list-style-type: none"> a. Technical proposal details fully on how the scope will be executed and provides comprehensive methodology of executing the scope including the training which will be provided for the technical staff and the simulator instructor. b. Confirm compliance with relevant standards and guidelines, the required information/input data required for such compliance and risk associated with unavailability of specified required information. c. A description of how models have been developed based on existing process information, and how sourcing of required information will be dealt with. d. List of C&I systems which has been emulated /incorporated in previous projects. 			
	2.1	Technical proposal details fully on how the scope will be executed and provides comprehensive methodology in answering questions a-d above.			5
	2.2	The proposal addresses the core subsystem scope(s) offered by the bidder (c & d), and both a) and b).			4
	2.3	The proposal addresses the core subsystem scope(s) offered by the bidder (c & d), and only a) or b), not both			2
	2.2	Technical proposal does not describe on how the scope will be executed and does not provide comprehensive methodology of executing the scope in compliance with the relevant standards and guidelines and deliverables are not listed or detailed as point a-d above.			0
3.	LICENSE AGREEMENTS WITH THE DCS OEM			10	
	Where Simulator vendor is not the original equipment manufacturer (OEM) of the DCS emulator, license agreements with OEM or letters requesting such cooperation with the DCS supplier (and responses), their distributors and/or agents shall be in place.				
	3.1	Bidder is the DCS OEM and has emulation package to complete the project, or the Bidder has secured OEM DCS files (a letter from the DCS OEM or actual list of files) to complete the emulation.			5

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	3.2	Bidder is not the OEM, and has own process modelling OR emulation software packages, with license agreements, BUT has not secured DCS files for completing the emulation and requires Employer's intervention.			4
	3.3	Bidder does not have or own any of the emulation OR process modelling software packages, and these are all outsourced, and has not secured DCS files for completing emulation.			2
	3.4	Bidder does not clarify the software packages for DCS emulation and Plant modelling, and no licensing agreement arrangements are mentioned.			0
4.	RELEVANT QUALIFICATIONS AND EXPERIENCE			10	
	The <i>Tenderer</i> to provide the details of the individuals in his service with relevant qualifications, extensive knowledge, and relevant years of in development, implementation, and commissioning of Industrial Plant Simulators. Provide proof of, qualification, training and work experience (Summary CV's).				
	4.1	B-Eng or B-Tech (Computer/Electronic/ Chemical / Mechatronics/ Fluid Thermodynamics Engineering) or Greater and > 8 years OR Engineering degree with more than three years' experience in simulators or Diploma with more than >8 years experience in simulators.			5
	4.2	B-Eng or B-Tech or National Diploma (Computer/Electronic/ Chemical Mechatronics/ Fluid Thermodynamics Engineering) and Process Modelling / digital twin experience Greater and less than 8 years but greater than 3 years .			4
	4.3	Has the above qualifications but less than 3 years experience.			2
	4.4	No qualification and 0 years.			0
5.	ORGANISATION ORGANOGRAM			5	
	Provide an organogram highlighting structure to be utilised for this contract and number of Engineers (as per CV's supplied above in 4) and Project Management staff in the				

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	implementation and commissioning of this project. Structure must identify any subcontracted resources.				
	5.1	The structure has a Project Manager with more than 5 years' experience in Industrial or Commercial Simulators / Digital Twins, and the engineers (mentioned in 3 above) have at least a Computer / Network Engineer and a Process Modelling (Chem, Mechatronic, Fluid Dynamics) Engineer.			5
	5.2	The Structure has a PM with less than 5 years' experience but greater than or equal to 3 years, in Industrial or Commercial Simulators / Digital Twins and Engineers (mentioned in 3 above), at least with software engineering background.			4
	5.3	The structure has a PM with less than 3 years experience in the field of Industrial or Commercial Simulators / Digital twins, and there is no correlation to the CV's given (mentioned in 3 above).			2
	5.4	No structure provided = 0			0
6.	ESTABLISHED RELATIONSHIP WITH LOCAL ENTITIES			10	
	<i>Tenderer</i> has an established relationship with local entities to provide local technical support for a minimum of ten (10) years, and some of the project engineers are locally based.				
	6.1	Written assurance/proposal of more than 10-year support (or permanent presence in SA), with more than 40% of engineers locally based.			5
	6.2	Written assurance/proposal of less than 10 years, or with local engineer compliment less than 40%.			4
	6.3	No clear local support pledged or local presence, but local content of the engineers is still > 20% of the team.			2
	6.4	No clear local support pledged or no local content of engineers in the team.			0
7.	PROVISION OF A LEVEL 2 PROJECT PROGRAMME			5	

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	Provision of a Level 2 project programme in line with the works info requirements detailing all the activities and duration of completing the project.			
7.1	Project programme covers all the works info requirements detailing all the activities and duration of completing the project including all preparatory work and preliminary activities that will affect the execution of the scope, plus execution and 12-month warranty period.			5
7.2	Project programme covers all above but excludes 12-month warranty activities.			4
7.3	Project programme does not cover all the works information requirements and does not detail preliminary and preparatory work activities and duration of completing the project.			2
7.4	No project programme provided detailing all the activities and duration of completing the project.			0
8.	MEET SIMULATOR FUNCTIONAL DESIGN SPECIFICATION		30	
	<p>The <i>Tenderer</i> details what will be delivered in terms of the Simulator Functional Design Specification.</p> <p>a) Process modelling, simulator, Instructor software and hardware:</p> <ul style="list-style-type: none"> • Process modelling: A <i>Tenderer</i> to supply, develop, implement, test and optimise the process modelling for the process plant including the third-party systems (Boiler protection trip philosophy, turbine control and protection philosophy etc) as per section 3.10.2 of GVL/0584: Technical Specification for operator training simulator replacement. The <i>Contractor</i>, together with the <i>Employer</i>, shall convert and configure all plant process flow diagrams, consistent data set as per the reference unit control and operating philosophies as per the works information, to simulate real-world conditions. The <i>Contractor</i> will also be responsible for the successful integration of their components to the rest of the solution or other components (HMI & DCS emulation/simulation). • Simulator and Instructor hardware & software: The <i>Tenderer</i> to supply, configure, setup, the simulator and instructor software, hardware, all other subsystems required for the complete functionality of 			

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	<p>the operator simulator as well as the design and implementing the simulator network architecture to ensure the best performance conditions as per the works information. The <i>Contractor</i> will be responsible for the overall system integration as well as the lead for the commissioning of the entire simulator system. The <i>Contractor</i>, together with <i>Employer</i> shall, develop all test cases / scenarios, trainee evaluation and reporting to ensure a successful working solution. The system shall be capable of providing the standard industrial interface protocols (MODBUS, OPC, EtherNet/IP etc) in order for it to be interfaced with the components provided in package (b) below.</p> <ul style="list-style-type: none"> • The <i>Tenderer</i> must submit the network drawings for the proposed simulator in which the Tenderer shows how the Simulator equipment requirements of the Employer's Works Information shall be complied with. The supplier shall include all test cases / scenario, trainee evaluation and reporting to ensure a successful working solution. • The simulator network drawing must contain sufficient detail as to show the quantity, configuration and location of all simulator equipment offered. <p>The Tenderer must complete and submit Form 2_T and U.</p> <p>b) Emulation of the Control System and HMI</p> <ul style="list-style-type: none"> • The <i>Tenderer</i> to supply, engineer, configure, setup, test and commission a dedicated hardware and software of the DCS and HMI emulation/simulation as per section 3.10.3 of this document. The DCS and HMI provided by the Contractor shall be designed with a similar look and feel, including behaviour characteristics as those of the reference unit. The Contractor will also form part of the commissioning for the simulator solution and shall ensure successful integration of their components to the rest of the solution. The system shall be capable of providing the standard industrial interface protocols (MODBUS, OPC, EtherNet/IP etc) in order for it to be interfaced with the components provided in package (a) above. <p>The Tenderer must complete and submit Form 2_V.</p> <p>Depending on the system package offered by the Tenderer, the Evaluation will consider only that package. This means if only one package is offered, then the weighting shall be</p>			
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	50% for each package as per Form 2_T and U or V. If 2 packages are offered, then the weighting shall be 100% as per Form 2_T,U,V.			
8.1	Provided Functional Design Specifications as per tables T,U total > 90%.			5
8.2	Provided Functional Design Specifications as per tables T,U total <= 90% but >= 70%.			4
8.3	Provided Functional Design Specifications as per tables T,U total < 70% but >= 50%.			2
8.4	Provided Functional Design Specifications as per tables T,U total < 50%.			0
			TOTAL =100%	
	OR			
8.5	Provided Functional Design Specifications as per tables V total > 90%.			5
8.6	Provided Functional Design Specifications as per tables V total <= 90% but >= 70%.			4
8.7	Provided Functional Design Specifications as per tables V total < 70% but >= 50%.			2
8.8	Provided Functional Design Specifications as per tables V total < 50%.			0
			TOTAL =100%	

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3.5 TET MEMBER RESPONSIBILITIES

Key: X = Mandatory; O = Optional

Table 5: TET Member Responsibilities

Mandatory Criteria Number	TET 1	TET 2	TET 3	TET 4
N/A				
Qualitative Criteria Number	TET 1	TET 2	TET 3	TET 4
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X
5	X	X	X	X
6	X	X	X	X
7	X	X	X	X
8	X	X	X	X

3.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

It is anticipated that various risks, exceptions and conditions will be identified during the clarification and negotiation process. Each of those will be considered and evaluated individually to determine whether they are acceptable, unacceptable or whether suitable mitigation measures can be agreed upon.

Unacceptable technical risks include:

- The Tenderer's technical submission does not address entire scope required.
- The tenderer does not have established relationship with local entities to provide local technical support.

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation
Thabo Montja	Grootvlei Middle Manager Engineering
Mantombi Mkemzulu	Grootvlei C&I Engineering Manager
Christoph Kohlmeyer	Senior Manager Engineering (C&I)
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Cornelius Visagie	Chief Technologist (C&I)
Azwimbavhi Mamanyuha	General Manager Special Projects

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**Tender Technical Evaluation Strategy for Grootvlei Power
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Date	Rev.	Compiler	Remarks
November 2024	0	Reggy Mali	New Document
June 2025	1	Reggy Mali	Incorporated comments from the development team

6. DEVELOPMENT TEAM

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

Cornelius Visagie

Khaya Sobuwa

Christoph Kohlmeyer

7. ACKNOWLEDGEMENTS

None

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APPENDIX A: FORM 2_T: CHECKLIST: PLANT MODELS

	Requirement	<i>To be completed by the Tenderer</i>		(For use by the Evaluation Team only)
		Is this requirement met?	Tenderer's technical substantiation or references to technical substantiation	
	FORM 2_T: Plant Model			
i	The plant models shall be designed to simulate the reference Unit operation from ultra-cold start-up conditions through to maximum continuous rating, and back to ultra-cold start-up conditions, for all steady-state and transient conditions.	Yes/No		
	The plant model design shall take into account the following:			
i	Effects of changing plant parameters (including pressure, temperature, flow, and level).	Yes/No		
ii	Effects of changing parameters due to starting and stopping of all plant auxiliary plant.	Yes/No		
iii	Where 3rd party control systems are simulated, the control system models shall be a complete duplication of the systems simulated including all controllers, mode selections, interlocks and alarm functions.	Yes/No		
iv	The models for all drives, actuators, solenoid valves and similar plant or equipment simulated shall include all permissive, alarm outputs, interlocking and tripping functions as per the reference Unit.	Yes/No		
	FIDELITY OF THE PLANT MODEL			
i	The fidelity provided for critical systems is as defined in 240-154243686: Technical Requirements for Power Plant Simulators Standard.	Yes/No		

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ii	All other systems will have a steady state error of no more than 10% and a transient characteristic's time error of no more than 20%.	Yes/No		
iii	Minimum calculation cycle frequency will match that of the provided control system.	Yes/No		

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APPENDIX B: FORM 2_U: CHECKLIST: SIMULATOR EQUIPMENT

FORM 2_U: Checklist: Simulator Equipment				
	Requirement	To be completed by the Tenderer		(For use by the Evaluation Team only)
		Is this requirement met?	Tenderer's technical substantiation or references to technical substantiation	
	GENERAL REQUIREMENTS			
i	The Contractor will provide the simulator in accordance with: <ul style="list-style-type: none"> ANSI/ISA77.20.01-2012 Fossil Fuel Power Plant Simulators: Functional Requirements. 240-158191826 Generation Operation Training Requirements Specification for Power Plant Simulator 240-154243686 Technical Requirements for Power Plant Simulators Standard 	Yes/No		
	SIMULATOR USE			
	The simulator provided by the Contractor will be capable of doing the following:			
i.	Train the Employer's operating staff in the safe and efficient operation of the plant.	Yes/No		
ii.	Evaluate control, process and plant dynamics changes.	Yes/No		
iii.	Validate the Control System's Functional logic.	Yes/No		
iv.	Perform optimisation of the Control System of the Control System.	Yes/No		
	INSTRUCTOR STATION			
	The Instructor Station software shall interact with and control the plant models and control system emulator to perform the following functions as a minimum:			
i.	Software initialization.	Yes/No		
ii.	Set initial process conditions.	Yes/No		

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iii.	Developing of Initial Conditions (IC's).	Yes/No		
iv.	Freeze/Run.	Yes/No		
v.	Stopwatch function, i.e. freeze when certain time/plant criteria are met.	Yes/No		
vi.	Backtrack/Replay.	Yes/No		
vii.	Snapshot creation, selection and initialization.	Yes/No		
viii.	Setting and monitoring of remote plant functions.	Yes/No		
ix.	Setting and monitoring of external parameters.	Yes/No		
x.	Multiple malfunction injection and monitoring.	Yes/No		
xi.	Creation and execution of macro functions (allows several grouped malfunctions to be inserted with one action).	Yes/No		
xii.	Fast Forward functions (Faster than Real time) (Fast times like Fast Evacuation of the condensate, Fast Turbine Heat-up/cool-down).	Yes/No		
xiii.	Event logging of all simulation events including trainee and instruction actions.	Yes/No		
xv.	Setting of protection trip overrides.	Yes/No		
xvi.	Cry wolf alarm settings (allows initiating alarms without an abnormal plant condition).	Yes/No		
xvii.	Simulator analogue and digital input/output override.	Yes/No		
xviii.	Events action programme.	Yes/No		
xix.	Data collection system.	Yes/No		
xx.	Search/help function.	Yes/No		
xxi.	Background sound replicating actual plant sound.	Yes/No		
xxii.	The Contractor shall provide a standalone two-way intercom with adjustable volume from the instructor room to the simulator operator room.	Yes/No		
TRAINEE MONITORING AND ADMINISTRATION				
i	The Contractor shall provide a full digital video and audio recording system that allows the instructor to continuously	Yes/No		

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	record and view the actions of the trainee. The audio system shall allow for the continuous sound surveillance of the trainee and records all communication.			
ii	All keystrokes made by the student shall be recorded on the system for analysis and is synchronised with the video and audio recording system.	Yes/No		

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APPENDIX C: FORM 2_V: CHECKLIST: EMULATOR (CONTROL SYSTEM & HMI)

FORM 2_V: Checklist: Emulator				
	Requirement	To be completed by the Tenderer		(For use by the Evaluation Team only)
		Is this requirement met?	Tenderer's technical substantiation or references to technical substantiation	
	Simulator Control System & HMI			
i	The control system will be implemented using an emulator.	Yes/No		
ii	The control logic configuration shall be importable directly from the reference Unit to the simulator without any additional configuration or translating required.	Yes/No		
iii	The control logic and HMI implemented on the simulator shall be editable/configurable from the Engineering station using the same tools and procedures as used in the reference plant.	Yes/No		
	FIDELITY OF THE CONTROL SYSTEM			
i	The emulation of the control algorithms and logic shall be complete and designed such that no difference can be discerned between the operation of the simulator and the plant.	Yes/No		
ii	Minimum calculation cycle frequency shall match that of the provided control system.	Yes/No		
	ADDITIONAL CONTROL LOOPS			
i	The Protection Automation System for the Turbine and Boiler will be emulated.	Yes/No		
ii	The interface between the additional control loops and the process automation system control logic shall be implemented in the same manner as in the reference Unit to retain portability from the reference Unit to the simulator.	Yes/No		
	SIMULATOR HMI			

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i	The HMI configuration will be importable directly from the reference Unit to the simulator without any additional configuration required.	Yes/No		
ii	The Human-machine-interface (HMI), including the alarm system, of the simulator system shall be an exact replica of the reference Unit or plant HMI and shall utilise the same software, trend clients, descriptions, graphics and colours.	Yes/No		
iii	The HMI of the simulator system shall be capable of being modified/edited using the same software tools and via the same methods and procedures as the reference Unit HMI.	Yes/No		

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