



KENYA ELECTRICITY GENERATING COMPANY PLC

RFx: 500012126

KGN-KIP-14-2023

**TENDER FOR DISTRIBUTED CONTROL
SYSTEMS (DCS) UPGRADE FOR KIPEVU
III POWER STATION**

(OPEN INTERNATIONAL)

Date: 11th April, 2023

Clarification No.3

In accordance with the **Tender for Distributed Control Systems (DCS) Upgrade for Kipevu III Power Station**, KenGen issues **Clarification No. 3** as follows:

ITEM	BIDDER'S CLARIFICATION	KENGEN RESPONSE
I.	<p>We would like to make the following clarifications on the "Wartsila operator interface system (WOIS) InTouch 10.0.0 Patch2 system":</p> <ul style="list-style-type: none">• Would an upgrade of the current Wartsila system be an option, or is this to be replaced in its entirety (e.g. new standalone ecosystem)?• Would the Wartsila or InTouch system development files (source code) be available to use as the basis of a new system development?• If a new ecosystem is not required please clarify the following:<ul style="list-style-type: none">○ Does Wartsila offer the ability to 3rd parties to upgrade their systems or is this just a specific	<p>Refer to addendum No.3 Clause 1.2 on the scope of this upgrade.</p>

	<p>implementation of AVEVA InTouch libraries?</p> <ul style="list-style-type: none"> ○ Would the Wartsila or InTouch system development files (source code) be available? ○ Are we to upgrade the WOIS, WISE and CEMS to the latest versions? 	
<p>2.</p>	<p>Thank you very much for provide the response on the technical queries raised. As the scope got revised as per the latest released documents (Addendum -III) , we are hereby requesting for the following :</p> <p>(i) Additional Technical Queries – Attached</p> <p>(ii) Bid Submission date is requested to be extended to 02nd May 2023. We shall be thankful as it shall allow us submitting a firm bid as we have the confidence that we comply to the requirements specified and shall be able to deliver an efficient SCAD system similar to KIPEVU -I plant.</p>	<p>Refer to addendum No. 4</p>
<p>3.</p>	<p>I> COMMON QUERY:</p> <ul style="list-style-type: none"> • Kindly elaborate the details of plant information station. What kind of program shall be installed in this system. • Kindly provide us the details of the protocols supported by the controller, which is under operation at site. • We understand that connectivity between the controller& RIOs with existing SCADA are already available. The newly planned switch shall be connected to the 8port switch at “+CFC0_I (EXISTING)”, Please confirm. <p>Also Please provide the following information.</p> <ul style="list-style-type: none"> ○ Distance between “+CFC0_I (EXISTING)” to 42U cabinet (New). 	<ul style="list-style-type: none"> • Refer to Clarification 2 Item no.4. <p>Details of Availability and production report formats shall be provided to the successful bidder.</p> <ul style="list-style-type: none"> • Protocols: Modbus RTU, Modbus Plus, TCP IP • Confirmed, the new ethernet switches shall be connected to the 8port switch at “+CFC0_I (EXISTING)” • Distances: This is a site visit issue. <ul style="list-style-type: none"> ○ Distance between “+CFC0_I (EXISTING)” to 42U cabinet (New)- 20Metres

<ul style="list-style-type: none"> o Distance between 42U Cabinet (New) till Workstations consoles. o Distance between 42U Cabinet (New) till GIS Station, where Local cabinet is installed. o Distance between 42U Cabinet (New) till Fuel Treatment House , Where the common control panel is installed. <ul style="list-style-type: none"> • There are 9 Panel PCs are provided in the supply scope. Please provide, the distance between the Switch at 42 U cabinet (New) and mentioned Panel PC. <ul style="list-style-type: none"> • Kindly provide General assembly & Internal arrangement drawings for Common Control panel at Fuel Treatment House and RTU cabinet at GIS House. 	<ul style="list-style-type: none"> o Distance between 42U Cabinet (New) till Workstations consoles- 20Metres o Distance between 42U Cabinet (New) till GIS Station, where Local cabinet is installed- 90Metres. o Distance between 42U Cabinet (New) till Fuel Treatment House, Where the common control panel is installed- 70Metres. <ul style="list-style-type: none"> • Distance between “+CFC071 (EXISTING)” to new Local control cabinet DG#7 (at Powerhouse)- 100Metres • Distance between “+CFC061 (EXISTING)” to new Local control cabinet DG#6 (at Powerhouse)- 90Metres • Distance between “+CFC051 (EXISTING)” to new Local control cabinet DG#5 (at Powerhouse)- 80Metres • Distance between “+CFC041 (EXISTING)” to new Local control cabinet DG#4 (at Powerhouse)- 70Metres • Distance between “+CFC031 (EXISTING)” to new Local control cabinet DG#3 (at Powerhouse)- 60Metres • Distance between “+CFC021 (EXISTING)” to new Local control cabinet DG#2 (at Powerhouse)- 50Metres • Distance between “+CFC011 (EXISTING)” to new Local control cabinet DG#1 (at Powerhouse)- 45Metres <p>Note: KenGen is NOT liable for the accuracy of the physical measurements shared, it shall be the responsibility of the bidder to establish the accurate distances at site any time.</p>
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		<ul style="list-style-type: none"> Refer to Appendix V: Common Control Panel (CFA902) at Fuel Treatment House.
4.	<p>2> 2.1.14 The operator workstation monitors shall be connected to their respective PCs via KVM extenders. Query: Kindly clarify this requirement, as per Section 2.1.15 only Servers are requested to install in the 42U Cabinet. Also, as per “PROPOSED DCS-HMI AND PLC UPGRADE.pdf” document only server is given with 42U. Please confirm the requirement.</p>	<p>Refer to Addendum No.3 detailed scope clause 2.1.16, 2.1.18,</p> <p>As per clause 2.1.16: five (5) thick client workstations and one (1) plant information workstation assembled in a 42U cabinet. This therefore means that the operator workstation monitors shall be connected to their respective PCs via KVM extenders.</p> <p>As per clause 2.1.18: servers shall be supplied assembled in a 42U cabinet.</p> <p>As per schedule I of requirements, a total of two (2) 42U cabinets shall be supplied for installation of the servers, switches, firewall, NTP server, KVM switch, operator workstations and plant information workstations.</p>
5.	<p>3> 3.1.33 License requirements:</p> <ol style="list-style-type: none"> Development license for total tag count of 60000(or more)—I No. Run time licenses for total tag count of 60000 (or more) --- per Operator station. Communication capability for HMI application and devices with visibility shall have a minimum of the following protocols. IEC 61850 IEC 60870-5-101 IEC 60870-5-103 IEC 60870-5-104 OPC UA Modbus TCP/IP Modbus RTU Profinet Profibus <p>Query: We did not see the connection details and the requirements of IEC 60870-</p>	<p>These Communication protocols are required for integration capability of the new system to other third-party systems both at process and business network levels now and in future.</p>

	5-101, IEC 60870-5-103, Profibus, Profinet, protocols, please confirm whether this communication protocols required.	
6.	<p>4> SCHEDULE I No: 15 “Electrical accessories</p> <p>Query: We Understand the Electrical accessories means cabinet Fan and Light used in the cabinet where computers / Servers are mounted. Please confirm.</p>	Electrical accessories means any electrical components and materials necessary for the project eg electrical cables, power distribution units, panel fans, panel lighting, power adapters and converters etc.
7.	<p>5> 1.2.22. The DCS HMI system shall be designed in a server client concept where all the operator stations shall draw and send plant commands through the server.</p> <p>2.1.3 A total failure of both servers shall not affect the communication, monitoring, control and supervision of the PLCs by the operator workstations.</p> <p>Query: Above two statements contradict each other. 1st statement asks to fetch data from server, and the 2nd statement informs to work independently. Please clarify.</p>	Operator workstations shall be equipped with HMI application and runtime license for independent operation in case of server failure. The operator workstations shall be thick clients.
8.	<p>6> 3.1.13 All the alarms and events that occur should be time stamped at the controllers except for defined plant trip input signals which shall be timestamped at 1mS SOE input module.</p> <p>Query: Since the PLC supply scope as per the original tender has been removed, we judge, above requirement is not applicable as per the revised scope.</p>	Not applicable as per addendum 3
9.	<p>7> SCHEDULE I / 14 No. Networking Tools and accessories Lot I</p> <p>Query: We assume to supply prefabricated Cat-6 Cables with conduit connector for the connection between the workstation and switch. Please clarify this requirement.</p>	<p>Networking tools;</p> <ol style="list-style-type: none"> 1. Fiber Fusion Splicer Kit -1 set (Fujikura 90S OR equivalent), 2. Network Installation kit 15 in 1 (1 set)

		Network accessories means any components and materials necessary for the project.
10.	8> 2.2 SCADA Data Gateway Query: We understand if the proposed SCADA has the SCADA Data Gateway capability embedded then the same may be excluded. Please confirm	Bidders are encouraged to deploy the SCADA gateway as a link to the GIS network. The SCADA gateway is still a requirement as per the tender specifications.

SUPPLIER ACKNOWLEDGEMENT OF CLARIFICATION NO. 3

We, the undersigned hereby certify that the clarification is an integral part of the document and the alterations set out in clarification has been incorporated in the Tender document.

Signed.....

Tenderer.....

Date.....