
*The Kenya Power & Lighting Co. Ltd.
Central Office – P.O. Box 30099, Nairobi, Kenya
Telephone – 254-02-3201000
Fax No. 254-02-3201889
Stima Plaza, Kolobot Road*

Our Ref: KP1/9A.3/OT/22/24-25

23rd April, 2025

TO ALL PROSPECTIVE TENDERERS

RE: ADDENDUM NO. 5 TO THE TENDER NO. KP1/9A.3/OT/22/24-25 SUPPLY OF POWER TRANSFORMERS, SPARE TAP CHANGERS AND SWITCHBOARD PANELS.

The following amendments are made to the specified provisions of the Tender document for Supply of Power Transformers, Spare Tap Changers and Switchboard Panels.

1. RELATIONSHIP WITH THE PRINCIPAL TENDER DOCUMENT

Save where expressly amended by the terms of this Addendum, the Principal Tender Document shall continue to be in full force and effect.

The provisions of this Addendum shall be deemed to have been incorporated in and shall be read as part of the Principal Tender Document.

2. CLARIFICATION

The attached **Annexure 1-3** are responses made to clarifications sought on various issues on the Technical Specifications.

3. AMENDMENTS

Following the extension of the tender closing date, tender security for **23rd April 2025** shall be considered.

4. TENDER CLOSING DATE

The tender closing remains **30th April 2025** at 10:00am, opening of the Tender will take place thereafter at the Auditorium, Stima Plaza on the same day at 10.30am.

All the other terms and conditions remain as per the tender document.

Yours faithfully,

For: KENYA POWER & LIGHTING COMPANY LIMITED.



DR. JOHN NGENO, OGW
GENERAL MANAGER, SUPPLY CHAIN & LOGISTICS

ANNEXURE 1: CLARIFICATIONS FOR 23MVA, 66/33KV TRANSFORMER					
Sr. No.	Stipulation as per Technical Specification	Clarifications / Confirmation	KPLC Reply 1	TTDI REPLY 16/4/25	KPLC Reply 2
9	As per the given technical specification clause no 4.6.4 mentioned: Adequate oil ducts shall be provided in the core for cooling.	Cooling ducts for core for this capacity of transformer is not required as hotspot in core is very less than required and hence same will not be provided. Please confirm.	To guarantee efficient surface cooling of the core and mitigate against insulation failures and transformer damage due to overheating, please provide oil ducts made of chemically and thermally stable material.	As per the IEC60076-Part-7, AnnexB-B.2 mentioned as below "a) Core hot-spot inside the core, should be limited to 130 °C under conditions of highest core excitation, rated load and maximum ambient temperature. b) Core surface hot-spot, which is in contact with oil and solid insulation materials, should be limited according to Table 2.(i.e 140 °C)," as per our experience with earlier executed orders upto 40MVA (without cooling ducts) the calculated core hotspot is very less and working properly at site, and hence we would like to proceed without oil ducts for core.	Adhere to the specs
11	As per the given technical specification clause no 4.8.6 mentioned: Bushing terminals shall be clamp type suitable for both copper and aluminium busbars of sizes up to 76mm diameter.	Against this clause, running bus bar of this much diameter (76mm) is not preferred since the loading on bushing will lead to bushing leakage hence we would like proceed flag type connectors of suitable size as per DIN standard. Please confirm.	These connectors are frequently connected/disconnected during transformer maintenance and the most suitable application for this is clamp type connectors. They are simple to remove and install. The system vibrations are also not as much	Noted to provide the mentioned connectors with suitable diameter based on the rated current.	OK
12	As per the given technical specification clause no 4.9.1 mentioned: HV-SIDE(33kV) A. Core-2 : 15VA,200/1A,cl.PX B. Core-2 : 15VA,200/1A,cl.PX C. Core-2 : 15VA,200/1A,cl.PX	Against this clause please specify the below details for PX class CT's i.e magnetizing current at V_k or $V_k/2$, secondary resistance, knee point voltage and instrument safety factor etc. further burden is not applicable for PX class CT's	The design must ensure that the knee point voltage (V_k) is high enough to prevent core saturation during fault currents considering worst fault level of 31kA. The resistance of the secondary winding must be minimized to ensure that the CT delivers the required voltage and current to the protection relays even under fault condition.	As a transformer manufacturer, we will provide the CT's as per the customer requirement only it will purely based on the system faults. Hence, please provide the values to be considered, i.e magnetizing current at V_k or $V_k/2$, secondary resistance, knee point voltage and instrument safety factor etc. further burden is not applicable for PX class CT's	Use fault level of 31kA

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Sr. No.	Stipulation as per Technical Specification	Clarifications / Confirmation	KPLC Reply 1	TTDI REPLY 16/4/25	KPLC Reply 2
13	As per the given technical specification clause no 4.9.1 mentioned: LV-SIDE(11 kV) a. Core-3 : 15VA,400/1A,cl.PX b. Core-3 : 15VA,400/1A,cl.PX c. Core-3 : 15VA,400/1A,cl.PX n. Core-1 : 15VA,400/1A,cl.PX	Against this clause please specify the below details for PX class CT's i.e magnetizing current at V_k or $V_k/2$, secondary resistance, knee point voltage and instrument safety factor etc. further burden is not applicable for PX class CT's	The design must ensure that the knee point voltage (V_k) is high enough to prevent core saturation during fault currents considering worst fault level of 31kA. The resistance of the secondary winding must be minimized to ensure that the CT delivers the required voltage and current to the protection relays even under fault condition. For reliable and accurate CT operation, the core material to have low loss, low reluctance values and low flux density.	As a transformer manufacturer, we will provide the CT's as per the customer requirement only it will purely based on the system faults. Hence, please provide the values to be considered, i.e magnetizing current at V_k or $V_k/2$, secondary resistance, knee point voltage and instrument safety factor etc. further burden is not applicable for PX class CT's	Use fault level of 31kA
	As per the given technical specification clause no 4.17.1 mentioned: The interior of all transformer tanks and other oil-filled chambers shall be cleaned of all scale and rust by shot blasting or other approved method. Hot oil resistant varnish on white synthetic enamel paint is to be used for painting the inside of all oil filled chambers, including transformer tanks and CT chambers & covers. The final coat shall be of a light-coloured anti-condensation finish.	The statements in given clause are not clear hence we would like to proceed with epoxy based Hot oil resistant varnish for oil-filled chambers further anti-condensation finish is not applicable since oil-filled chambers. Please review and confirm.	Hot oil resistant varnish on white synthetic enamel paint is to be used for painting the inside of all oil filled chambers, including transformer tanks and CT chambers & covers. The final coat shall be of a light-coloured anti-condensation finish.	We can do either synthetic enamel paint or varnish. From our past experience, we never came across varnishing over painting. We can't do varnish over paint due to compatibility issue. So, please confirm to proceed with either synthetic enamel paint or varnish.	Adhere to specs
27	As per the given technical specification clause no 4.19 mentioned : All fittings & Accessories including Gas & Oil actuated relay shall be of a design make approved by KPCL	Against this clause, please provide if any approved vendor list is there, or else please confirm whether we can proceed with reputed Indian makes which are approved by us.	Proceed with reputed Indian makes but requirements of clause 4.19 must be met. Detailed list and brochures of all the required fittings and accessories indicating type/model number, manufacturer should be submitted with the bid	We will provide mentioned details like (brochures/type/model numbers etc) at the time of order execution stage. Please confirm.	Submit with your bid
30	As per the given technical specification clause no 5.3.1 mentioned : Efficiency at 50%, 75%, 100% loading at unity p.f and rated terminal voltage (Corrected to 75°C),	Against this clause, Efficiency at 50%, 75%, 100% loading at unity p.f and rated terminal voltage will be demonstrated by the calculation. Please confirm the same to be ok.	This should be part of routine test during FAT as per the specification requirements.	Based on the routine test results of no load losses and load losses, efficiency and regulation will be derived. Please confirm the same to be ok.	OK

ANNEXURE 1: CLARIFICATIONS FOR 23MVA, 66/33KV TRANSFORMER					
Sr. No.	Stipulation as per Technical Specification	Clarifications / Confirmation	KPLC Reply 1	TTDI REPLY 16/4/25	KPLC Reply 2
32	As per the given technical specification clause no 5.3.3 mentioned : insulation dissipation factor	Against this clause, 5. We would like to guarantee value of $\tan \delta$ is $\leq 1\%$ @ 20 Deg.C at following combinations Measurement Between HV-LV LV-HV (HV Earthed) HV-LV (LV Earthed) Please confirm the same to be ok.	Adhere to dissipation factor of less than 0.5% @ 20 Deg.C	Noted to confirm $\tan \delta$ as 0.5% @ 20 Deg.C at following combinations Measurement Between HV-LV LV-HV (HV Earthed) HV-LV (LV Earthed)	OK
General					
34		Please confirm Any specific make of components are required if any Else we will proceed with any reputed indian make as per our approved vendor list	Detailed list and brochures of all the required fittings and accessories indicating type/model number, manufacturer should be submitted with the bid	We will provide mentioned details like (brouchers/type/model numbers etc) at the time of order execution stage. Please confirm.	Submit with your bid

ANNEXURE 2: CLARIFICATIONS FOR 7.5MVA, 33/11KV TRANSFORMER

Sr. No.	Stipulation as per Technical Specification	Clarifications / Confirmation	KPLC Reply 1	TTDI REPLY 16/4/25	KPLC Reply 2
9	As per the given technical specification clause no 4.6.4 mentioned: Adequate oil ducts shall be provided in the core for cooling.	Cooling ducts for core for this capacity of transformer is not required as hotspot in core is very less than required and hence same will not be provided. Please confirm.	To guarantee efficient surface cooling of the core and mitigate against insulation failures and transformer damage due to overheating, please provide oil ducts made of chemically and thermally stable material.	As per the IEC60076-Part-7, AnnexB-B.2 mentioned as below "a) Core hot-spot inside the core, should be limited to 130 °C under conditions of highest core excitation, rated load and maximum ambient temperature. b) Core surface hot-spot, which is in contact with oil and solid insulation materials, should be limited according to Table 2.(i.e 140 °C)," as per our experience with earlier executed orders upto 40MVA (without cooling ducts) the calculated core hotspot is very less and working properly at site, and hence we would like to proceed without oil ducts for core.	Comply with the specs
11	As per the given technical specification clause no 4.8.6 mentioned: Bushing terminals shall be clamp type suitable for both copper and aluminium busbars of sizes up to 76mm diameter.	Against this clause, running bus bar of this much dia(76mm) is not preferred since the loading on bushing will lead to bushing leakage hence we would like proceed flag type connectors of suitable size as per DIN standard. Please confirm.	These connectors are frequently connected/disconnected during transformer maintenance and the most suitable application for this is clamp type connectors. They are simple to remove and install. The system vibrations are also not as much	Noted to provide the mentioned connectors with suitable diameter based on the rated current.	OK
12	As per the given technical specification clause no 4.9.1 mentioned: HV-SIDE(33kV) A. Core-2 : 15VA,150/1A,cl.X B. Core-2 : 15VA,150/1A,cl.X C. Core-2 : 15VA,150/1A,cl.X	Against this clause please specify the below details for PX class CT's i.e magnetizing current at V_k or $V_k/2$, secondary resistance, knee point voltage and instrument safety factor etc. further burden is not applicable for PX class CT's	The design must ensure that the knee point voltage (V_k) is high enough to prevent core saturation during fault currents considering worst fault level of 31kA. The resistance of the secondary winding must be minimized to ensure that the CT delivers the required voltage and current to the protection relays even under fault condition.	As a transformer manufacturer, we will provide the CT's as per the customer requirement only it will purely based on the system faults. Hence, please provide the values to be considered, i.e magnetizing current at V_k or $V_k/2$, secondary resistance, knee point voltage and instrument safety factor etc. further burden is not applicable for PX class CT's	Use fault level of 31kA
13	As per the given technical specification clause no 4.9.1 mentioned: LV-SIDE(11 kV) a. Core-3 : 15VA,400/1A,cl.X b. Core-3 : 15VA,400/1A,cl.X c. Core-3 : 15VA,400/1A,cl.X n. Core-1 : 15VA,400/1A,cl.X	Against this clause please, specify the below details for PX class CT's i.e magnetizing current at V_k or $V_k/2$, secondary resistance, knee point voltage and instrument safety factor etc. further burden is not applicable for PX class CT's	The design must ensure that the knee point voltage (V_k) is high enough to prevent core saturation during fault currents considering worst fault level of 31kA. The resistance of the secondary winding must be minimized to ensure that the CT delivers the required voltage and current to the protection relays even under fault condition.	As a transformer manufacturer, we will provide the CT's as per the customer requirement only it will purely based on the system faults. Hence, please provide the values to be considered, i.e magnetizing current at V_k or $V_k/2$, secondary resistance, knee point voltage and instrument safety factor etc. further burden is not applicable for PX class CT's	Use fault level of 31kA

ANNEXURE 2: CLARIFICATIONS FOR 7.5MVA, 33/11KV TRANSFORMER

Sr. No.	Stipulation as per Technical Specification	Clarifications / Confirmation	KPLC Reply 1	TTDI REPLY 16/4/25	KPLC Reply 2
25	As per the given technical specification clause no 4.17.1 mentioned: The interior of all transformer tanks and other oil-filled chambers shall be cleaned of all scale and rust by shot blasting or other approved method. Hot oil resistant varnish on white synthetic enamel paint is to be used for painting the inside of all oil filled chambers, including transformer tanks and CT chambers & covers. The final coat shall be of a light-coloured anti-condensation finish.	The statements in given clause are not clear hence we would like to proceed with epoxy based Hot oil resistant varnish for oil-filled chambers further anti-condensation finish is not applicable since oil-filled chambers . Please review and confirm.	Hot oil resistant varnish on white synthetic enamel paint is to be used for painting the inside of all oil filled chambers, including transformer tanks and CT chambers & covers. The final coat shall be of a light-coloured anti-condensation finish.	We can do either synthetic enamel paint or varnish. From our past experience, we never came across varnishing over painting. We can't do varnish over paint due to compatibility issue. So, please confirm to proceed with either synthetic enamel paint or varnish.	adhere to the specifications
27	As per the given technical specification clause no 4.19 mentioned : All fittings& Accessories including Gas& Oil actuated relay shall be of a design make approved by KPLC	Against this clause, please provide if any approved vendor list is there, or else please confirm whether we can proceed with reputed indian makes which are approved by us.	Proceed with reputed indian makes but requirements of clause 4.19 must be met. Detailed list and brochures of all the required fittings and accessories indicating type/model number, manufacturer should be submitted with the bid	We will provide mentioned details like (brochures/type/model numbers etc) at the time of order execution stage. Please confirm.	Submit with your bid
30	As per the given technical specification clause no 5.3.1 mentioned : Efficiency at 50%, 75%, 100% loading at unity p.f and rated terminal voltage (Corrected to 75°C),	Against this clause, Efficiency at 50%, 75%, 100% loading at unity p.f and rated terminal voltage will be demonstrated by the calculation. Please confirm the same to be ok.	This should be part of routine test during FAT as per the specification requirements.	Based on the routine test results of no load losses and load losses, efficiency and regulation will be derived. Please confirm the same to be ok.	OK
32	As per the given technical specification clause no 5.3.3 mentioned : insulation dissipation factor	Against this clause, 5.We would like to guarantee value of $\tan \delta$ is $\leq 1\%$ @ 20 Deg.C at following combinations Measurement Between HV-LV LV-HV (HV Earthed) HV-LV (LV Earthed) Please confirm the same to be ok.	Adhere to dissipation factor of less than 0.5% @ 20 Deg.C	Noted to confirm tan delta as 0.5% @ 20 Deg.C at following combinations Measurement Between HV-LV LV-HV (HV Earthed) HV-LV (LV Earthed)	OK
General					

ANNEXURE 2: CLARIFICATIONS FOR 7.5MVA, 33/11KV TRANSFORMER					
Sr. No.	Stipulation as per Technical Specification	Clarifications / Confirmation	KPLC Reply 1	TTDI REPLY 16/4/25	KPLC Reply 2
34		Please confirm Any specific make of components are required if any Else we will proceed with any reputed indian make as per our approved vendor list	Detailed list and brochures of all the required fittings and accessories indicating type/model number, manufacturer should be submitted with the bid	We will provide mentioned details like (brouchers/type/model numbers etc) at the time of order execution stage. Please confirm.	Submit with your bid

ANNEXURE 3: CLARIFICATIONS FOR 2.5MVA, 33/11KV TRANSFORMER

S.NO.	Stipulation as per Technical Specification	Clarifications / Confirmation	KPLC Reply 1	TTDI REPLY 16/4/25	KPLC Reply 2
6	As per the given technical specification clause no 4.6.4 mentioned: Adequate oil ducts shall be provided in the core for cooling.	Cooling ducts for core for this capacity of transformer is not required as hotspot in core is very less than required and hence same will not be provided. Please confirm.	To guarantee effeicient surface cooling of the core and mitigate against insulation failures and transformer damage due to overheating, please provide oil ducts made of chemically and thermally stable material.	As per the IEC60076-Part-7, AnnexB-B.2 mentioned as below "a) Core hot-spot inside the core, should be limited to 130 °C under conditions of highest core excitation, rated load and maximum ambient temperature. b) Core surface hot-spot, which is in contact with oil and solid insulation materials, should be limited according to Table 2.(i.e 140 °C)," as per our experience with earlier excuted orders upto 40MVA (without cooling ducts) the calculated core hotspot is very less and working properly at site, and hence we would like to proceed without oil ducts for core.	Comply with the specs.
8	As per the given technical specification clause no 4.8.6 mentioned: Bushing terminals shall be clamp type suitable for both copper and aluminium busbars of sizes up to 76mm diameter.	Against this clause, running bus bar of this much dia(76mm) is not preffered since the loading on bushing will lead to bushing leakage hence we would like proceed flag type connectors of suitable size as per DIN standard. Please confirm.	These connectors are frequently connected/disconnected during transformer maintenance and the most suitable application for this is clamp type connectors. They are simple to remove and install.The system vibrations are also not as much	Noted to provide the mentioned connectors with suitable diameter based on the rated current.	OK
14	As per the given technical specification clause no 4.14.1 mentioned: The interior of all transformer tanks and other oil-filled chambers shall be cleaned of all scale and rust by shot blasting or other approved method. Hot oil resistant varnish on white synthetic enamel paint is to be used for painting the inside of all oil filled chambers, including transformer tanks and CT chambers & covers. The final coat shall be of a light-coloured anti-condensation finish.	The statements in given clause are not clear hence we would like to proceed with epoxy based Hot oil resistant varnish for oil-filled chambers further anti-condensation finish is not applicable since oil-filled chambers	Hot oil resistant varnish on white synthetic enamel paint is to be used for painting the inside of all oil filled chambers, including transformer tanks and CT chambers & covers. The final coat shall be of a light-coloured anti-condensation finish.		Adhere to the specs

ANNEXURE 3: CLARIFICATIONS FOR 2.5MVA, 33/11KV TRANSFORMER

S.NO.	Stipulation as per Technical Specification	Clarifications / Confirmation	KPLC Reply 1	TTDI REPLY 16/4/25	KPLC Reply 2
19	As per the given technical specification clause no 5.3.1 mentioned : Magnetic balance test	Magnetic balance test will be performed during Final Inspection on Transformer from STAR winding side. The limitation criteria shall be as follows The voltage induced in the center phase shall be 50% to 90% of the applied voltage on the outer phases and when the Center phase is excited then the voltage induced in the outer phases shall be 30 to 70% of the applied voltage. <i>Please review and confirm</i>	This should be part of routine test during FAT as per the specification requirements.	Based on the routine test results of no load losses and load losses, efficiency and regulation will be derived. Please confirm the same to be ok.	Clarification not relevant to Magnetic Balance Test
20	As per the given technical specification clause no 5.3.3 mentioned : insulation dissipation factor	Against this clause, 5.We would like to guarantee value of $\tan \delta$ is $\leq 1\%$ @ 20 Deg.C at following combinations Measurement Between HV-LV LV-HV (HV Earthed) HV-LV (LV Earthed) Please confirm the same to be ok.	Adhere to dissipation factor of less than 0.5% @ 20 Deg.C	Noted to confirm $\tan \delta$ as 0.5% @ 20 Deg.C at following combinations Measurement Between HV-LV LV-HV (HV Earthed) HV-LV (LV Earthed)	OK
General					
3		Please confirm Any specific make of components are required if any. Else we will proceed with any reputed indian make as per our approved vendor list	Proceed with reputed indian makes but requirements of clause 4.19 must be met. Detailed list and brochures of all the required fittings and accessories indicating type/model number, manufacturer should be submitted with the bid	We will provide mentioned details like (brouchers/type/model numbers etc) at the time of order execution stage. Please confirm.	Submit with your bid