



Kenya Power

**SPECIFICATIONS FOR ELECTRIC OVERHEAD TRAVELLING CRANE OF 5 TONS AT
NAKURU DEPORT TRANSFORMER REPAIR WORKSHOP.**

A Document of the Kenya Power & Lighting Co. Ltd
April 2026



**TITLE: SPECIFICATIONS FOR
ELECTRIC OVERHEAD TRAVELLING
CRANE OF 5 TONS**

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0.1 CIRCULATION LIST

COPY NO.	COPY HOLDER
1	Engineer, E/plant Workshop
2	

0.2 AMENDMENT RECORD

Rev No.	Date (YYYY-MM-DD)	Description of Change	Prepared by (Name & Signature)	Approved by (Name & Signature)
0	2026-02-24	New issue	<i>D. Mwangi</i>	<i>D. ACHENJI</i>

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FOREWORD

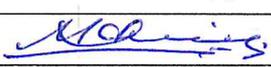
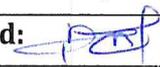
This specification have been prepared by the E/plant workshop of The Kenya Power and Lighting Company Limited (KPLC) and it lays down requirements for specifications of Electric overhead Travelling crane of 5 tons capacity.

Electric Overhead Travelling crane of 5 tons capacity is to be used by the E/plant workshop to lift distribution transformers in repair process and other load brought into workshop for repairs

This specification was prepared to establish requirements for specifications of the 5-ton Electric overhead travelling crane equipment installation of new crab, controls and power supply to be used at Kenya Power and Lighting Company Ltd.

This specification stipulates the minimum requirements for overhead crane 5 tons supply and installation acceptable for use in the company and it shall be the responsibility of the supplier to ensure that the offered crane crabs are of the highest quality, guarantees excellent service and aftersales support to KPLC, .

Users of Kenya Power specifications are responsible for their correct interpretation and application.

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1. SCOPE

1.1. Designs, supply, fabrication, erection, painting, inspection, testing, commissioning and handing over of electric overhead transverse Cranes consisting of One (1) hoist crab of capacity 5 ton and associated controls,

2. NORMATIVE REFERENCES

The following standards contain provision, referenced from original design engineering drawing, and constitute provisions of specification. Of crane design and manufacturing.

All data without any dynamic factor account to: En 199 3 (KN)

All data with dynamic account to: EN 13001 /EN 15011/EN 1993

3. DEFINITIONS AND ABBREVIATIONS

For the purpose of this specification, the definitions and abbreviations given in the reference standards shall apply together with the following abbreviations.

3.1. ABBREVIATIONS

L- Length across the bridge

EOT-Electric Overhead Traveling

V - Volt

Hz - frequency

Kg- kilogram

M- Meter

Pc- piece

°C - degree Celsius

mm- millimeter

 - Diameter.

Ton – tonnes

KN- kilonewton

Min- minutes

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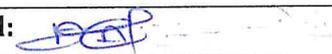
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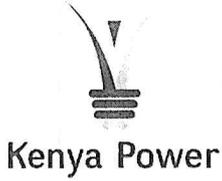
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4 REQUIREMENTS

4.1 SERVICE CONDITIONS

4.1.1 Electric Overhead travelling (EOT) Crane shall be suitable for use indoors in tropical areas and harsh climatic conditions including areas exposed to:

- a) Altitudes of up to 2200m above sea level;
- b) Humidity of up to 95%;
- c) Average ambient temperature of +30°C with a minimum of 10°C and a maximum of +50°C
- d) Pollution: Degree 2

4.2 DESIGN AND CONSTRUCTION

4.2.1 DESIGN

4.2.1.1 EOT Crane shall be rated for continuous operation, designed, manufactured and tested according to Design, Erection and Testing (Structural Portion) of Cranes and Hoists Code of practice

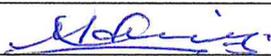
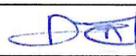
4.2.1.2 EOT Crane shall consist of one (1) crab capable of lifting 5,000Kg transformer during repair

4.2.1.3 EOT Crane shall be suitable for operation on 50Hz, 3 phase system with neutral solidly grounded, the 3 phase voltage supply shall be 415 V \pm 10%. The EOT crane shall be of latest design, sturdy in construction and requiring minimum maintenance.

4.2.2 CONSTRUCTION

4.2.2.1 The crab shall be installed on bridge and runway already exists.

4.2.2.2 The bidder shall attach Schematic drawing for the crane to be manufactured and it's parts for evaluation purposes.

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4.3 TECHNICAL SPECIFICATION

4.3.1 CRANE

- 4.3.1.1 The existing crane is a manual chain hoist (pull- chain operated)
- 4.3.1.2 The crane structure shall be double girder (Existing)
- 4.3.1.3 The crane shall be rated capacity 5000 kg (single crane of capacity 5000 kg)
- 4.3.1.4 Travel speed along runway shall be 10.0/40.0m/ min
- 4.3.1.5 All measurements shall be taken on site.

4.3.2 CRAB

- 4.3.2.1 The crab shall be on 4 wheel.
- 4.3.2.2 Cross travel speed shall be 5.0/20.0m/min

4.3.3 HOIST DRUM

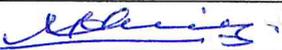
- 4.3.3.1 The hoist drum shall be capable of winding wire rope without a kicking.
- 4.3.3.2 Wire rope shall be capable of lifting at least 5,000 kg .
- 4.3.3.3 Wire rope shall be tested and issued with certificate.
- 4.3.3.4 Hook shall be capable of withstanding 5,000 kg load
- 4.3.3.5 Hoist speed shall be 0.8/5 m/min

4.3.4 GEARBOX

- 4.3.4.1 Motor gearbox shall be rigid enough to withstand load dynamics from 0kg to 5000kg
- 4.3.4.2 Gear box motor coupling shall withstand load dynamics without rapidly wearing also spare part should be available in the market for replacement in case of damage
- 4.3.4.3 Gearbox design shall enable inspection and replacement worn parts with ease.

4.3.5 MOTORS BRAKE SYSTEM.

- 4.3.5.1 Friction plates shall resist rapid wear due to operation at high pressure and torque.
- 4.3.5.2 Hoist motor Braking system shall be Electromagnetic ,when coil is supplied brake release ,when power supply is off brake applies
- 4.3.5.3 Braking disc shall be able to withstand torque of 5000 kg
- 4.3.5.4 Brake disc shall be made of materials, which are asbestos free.

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4.3.5.5 Brake disc shall be readily available in the market for replacement in case of damage or wear.

4.3.5.6 The brake shall be electromagnetic type when power goes off brake apply.

4.3.6 ELECTRICAL AND CONTROL SYSTEM:

4.3.6.1 Control boxes shall be mounted up on the girder

4.3.6.2 Power supply to both control boxes and hoist motors shall be tapped from the existing supply

4.3.6.3 The crane shall be controlled through Pendant push button type and wireless control mode (radio remote control)

4.3.6.4 Control scheme shall be designed to meet the above condition avoiding simultaneous operation of both.

4.3.6.5 A suitable selector switch shall be provided for selection of either pendant control or radio remote control.

4.3.6.6 Separate buttons shall be considered for each and every control action operating through pendant control and radio remote control.

4.3.6.7 No common buttons shall be used for various control action from pendant control and radio remote control operation.

4.3.6.8 Push button station, metal enclosed, dust-tight and oil proof (IP 65) construction and robust design with `start`, `stop`, hoisting and lowering, with `forward` and `reverse` for travel motions.

4.3.6.9 Stop buttons shall be lockable type.

4.3.6.10 An emergency push button with mushroom head shall be provided for cutting of power supply under emergency conditions.

4.3.6.11 The push button station shall be at a convenient height for operation from floor level and the multi-core control cables used for the push button station shall have suitable tough sheathing of PCP or equivalent materials.

4.3.6.12 The pendant cable shall have two (2) Nos. spare cores and two (2) Nos. separate cores for two distinct earthing.

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- 4.3.6.13 The weight of pendant push button station shall be supported independent of the electric cable by means of a chain or wire rope.
- 4.3.6.14 The pendant shall have lighting switch, indication lamps for CONTROL 'ON' & POWER 'ON'.
- 4.3.6.15 Both Pendant push button and remote control shall be made from oil resistance material to avoid crude oil product effect on the components.
- 4.3.6.16 Power supply to crabs and control systems shall be done using flexible flat cables
- 4.3.6.17 Power supply shall be 415V
- 4.3.6.18 Control voltage shall be 48V
- 4.3.6.19 Mains frequency shall be 50Hz
- 4.3.6.20 Motor shall be IP55 ingress protected
- 4.3.6.21 Hoist motor shall be induction type that will withstand stress due frequent start/stop.
- 4.3.6.22 Motor insulation shall be class H
- 4.3.6.23 Motors shall be Heavy duty reversible crane duty type
- 4.3.6.24 Motor operation mode shall be Continuous operating on load
- 4.3.6.25 Motor speed shall be variable as the crane operate in two speed at a time using one hoist motor cross transversers motors
- 4.3.6.26 Detailed electrical and control schematic diagrams shall be submitted with tender for evaluation purposes.

5 MARKING, LABELLING AND PACKING

5.1 MARKING

- 5.1.1 The following information shall be marked legibly and in a permanent manner on the Electric Overhead Travelling Crane:
- a) The manufacturer's name or trade mark;
 - b) Type, model and serial number;
 - c) Nominal input voltage and Frequency
 - d) Individual loads ratings of motors
 - e) Total Power (kW) Consumption
 - f) Lifting capacity

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g) Letters "PROPERTY OF KENYA POWER"

h) The instructions for handling and use (in the English Language)

5.2 PACKING

5.2.1 The electric overhead crane shall be packed to protect it from damage during transportation, handling and storage.

APPENDICIES

A: TESTS AND INSPECTION (Normative)

A.1 Electric overhead crane shall be inspected and tested in accordance with the requirements of this specification and international standards. It shall be the responsibility of the manufacturer to perform or to have performed all the tests. Tenderers shall confirm the manufacturer's capabilities in this regard when submitting tenders. Any limitations shall be clearly specified.

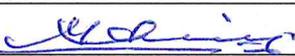
A.2 Electric overhead crane shall be subject to acceptance tests at the manufacturer's works before dispatch. Three Engineers appointed by KPLC shall witness acceptance tests

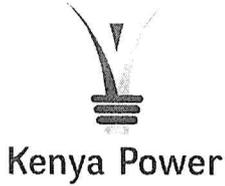
A.3 On receipt of the Electric overhead crane, Kenya Power will inspect them and may perform or have performed any of the relevant tests in order to verify compliance with the specification. The supplier shall replace without charge to Kenya Power, any part of Electric overhead crane that upon examination, test or use fail to meet any or all of the requirements in the specification.

B: QUALITY MANAGEMENT SYSTEM (Normative)

B.1 The supplier shall submit a quality assurance plan (QAP) that will be used to ensure that the Electric overhead crane physical properties, tests and documentation, will fulfill the requirements stated in the contract documents, standards, specifications and regulations. The QAP shall be based on and include relevant parts to fulfill the requirements of ISO 9001: 2015.

B.2 The Manufacturer's Declaration of Conformity to applicable standards and copies of quality management certifications including copy of valid and relevant ISO 9001:2015 certificate shall be submitted with the tender for evaluation.

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B.3 The bidder shall indicate the delivery time of the crane, manufacturer's monthly & annual production capacity and experience in the production of the Electric overhead crane being offered. A detailed list & contact addresses (including e-mail) of the manufacturer's previous customers for similar type of the Electric overhead crane sold in the last five years as well as reference letters from at least four of the customers shall be submitted with the tender for evaluation.

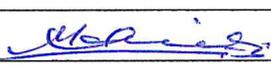
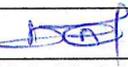
C: DOCUMENTATION AND DEMONSTRATION (Normative)

C.1 The bidder shall submit its tender complete with technical documents for tender evaluation. The technical documents to be submitted (all in English language) for tender evaluation shall include the following:

- a) Fully filled clause by clause guaranteed technical particulars (GTP) signed by the manufacturer;
- b) Copies of the Manufacturer's catalogues, brochures, drawings giving all relevant dimensions, schematic diagram and technical data;
- c) Sales records for the last five years and at least four customer reference letters;
- d) Details of manufacturing capacity and the manufacturer's experience;
- e) Manufacturers letter of authorization, ISO 9001 certificate, and other technical documents required in the tender.
- f) Manufacturer's warranty and guarantee; subject to 12 months from date of commissioning to KPLC site
- g) Operational manual.
- h) Service manual.

C.2 The successful bidder (supplier) shall submit the following documents/details to The Kenya Power & Lighting Company for approval before manufacture:

- a) Fully filled clause by clause guaranteed technical particulars (GTP) stamped and signed by the manufacturer;

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- b) Drawings of the Electric overhead crane to be manufactured for KPLC.
- c) Schematic drawings of the crane control systems and instrumentation with reference of the relevant international standards followed for the design and construction of the crane and its components/material
- d) General arrangement plan, section of main and sub-assemblies, with detailed dimensions of the crane and the size of each and every part of the equipment to be supplied under this specification
- e) Complete list of accessories and auxiliaries with their make and accompanied with catalogue/pamphlets/literature/write-ups
- f) Product manuals, operation manuals and brochures,
- g) Quality assurance plan (QAP) that will be used to ensure that the design, material; workmanship, tests, service capability, maintenance and documentation will fulfill the requirements stated in the contract documents, standards, specifications and regulations. The QAP shall be based on and include relevant parts to fulfill the requirements of ISO 9001.
- h) All documentation necessary for safety of the plant.
- i) Packaging details (including packaging materials).

C.3. The supplier shall submit recommendations for use, care, storage and routine inspection/testing procedures, all in the English Language, during delivery of the the Electric overhead crane to KPLC.

C.4. The successful bidder shall demonstrate to KPLC Staff (in Nakuru) the operation of the Electric overhead crane.

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D: GUARANTEED TECHNICAL PARTICULARS (Normative)

To be filled and signed by the Manufacturer and submitted for tender evaluation, should be in English Language)

Tender No.

Bidder's name and Address.....

Clause number	KPLC Requirement	Bidder's offer
	Manufacturer's Name and address	
	Country of origin	
4	REQUIREMENTS	
4.1	SERVICE CONDITIONS	
4.1.1	Electric Overhead travelling (EOT) Crane shall be suitable for use indoors in tropical areas and harsh climatic conditions including areas exposed to:	
a)	Altitudes	State
b)	Humidity	State
c)	Average ambient temperature	State
d)	Pollution:	State
4.2	DESIGN AND CONSTRUCTION	
4.2.1	DESIGN	
4.2.1.1	EOT Crane shall be rated for continuous operation, designed, manufactured and tested according to Design, Erection and Testing (Structural Portion) of Cranes and Hoists Code of practice	
4.2.1.2	EOT Crane Number of Crabs and lifting capacity	State
4.2.1.3	EOT Crane electrical supply requirements	State
4.2.2	CONSTRUCTION	
4.2.2.1	The crab shall be installed on bridge and runway already exists	State
4.2.2.2	The bidder shall attach Schematic drawing for the crane to be manufactured and its parts for evaluation purposes.	attach
4.3	TECHNICAL SPECIFICATION	
4.3.1	CRANE	
4.3.1.1	The existing crane is a manual chain hoist (pull- chain operated)	State
4.3.1.2	The crane structure shall be double girder (Existing)	State
4.3.1.3	The crane shall be rated capacity 5000 kg (single crab crane of capacity 5000 kg)	State
4.3.1.4	Travel speed along runway shall be 10.0/40.0m/ min	State

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Clause number	KPLC Requirement	Bidder's offer
4.3.1.5	It shall be the responsibility of the supplier to take all measurements.	State
4.3.2	CRAB	
4.3.2.1	The crab shall be on 4 wheel.	State
4.3.2.2	Cross travel speed shall be 5.0/20.0m/min	State
4.3.3	HOIST DRUM	
4.3.3.1	The hoist drum shall be capable of winding wire rope without a kicking.	State
4.3.3.2	Kilograms the Wire rope is capable of lifting	State
4.3.3.3	Wire rope shall be tested and issued with certificate.	State
4.3.3.4	The load hook is capable of withstanding	State
4.3.3.5	Hoist speed	State
4.3.4	GEARBOX	
4.3.4.1	Load dynamics Motor gearbox can withstand	State
4.3.4.2	Gear box motor coupling withstand load dynamics without rapidly wearing also spare part should be available in the market for replacement in case of damage	State
4.3.4.3	Gearbox design enable Inspection and replacement worn parts with ease.	State
4.3.5	MOTORS BRAKE SYSTEM.	
4.3.5.1	Friction plates resist rapid wear due to operation at high pressure and toque.	State
4.3.5.2	Hoist motor Braking system is Electromagnetic, when coil is supplied brake release ,when power supply is off brake applies	State
4.3.5.3	Torque Braking disc is able to withstand	State
4.3.5.4	Brake disc shall be made of materials, which are asbestoses free.	State
4.3.5.5	Brake disc shall be readily available in the market for replacement in case of damage or wear.	State
4.3.5.6	The brake shall be electromagnetic type when power goes off brake apply.	State
4.3.6	ELECTRICAL AND CONTROL SYSTEM:	
4.3.6.1	Control boxes shall be mounted up on the girder	State
4.3.6.2	Power supply to both control boxes and hoist motors shall be tapped from the existing supply	State
4.3.6.3	The crane shall be controlled through Pendant push button type and wireless control mode (radio remote control)	State
4.3.6.4	Control scheme shall be designed to meet the above condition avoiding simultaneous operation of both.	State
4.3.6.5	A suitable selector switch shall be provided for selection of either	State

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Clause number	KPLC Requirement	Bidder's offer
	pendant control or radio remote control.	
4.3.6.6	Separate buttons shall be considered for each and every control action operating through pendant control and radio remote control.	State
4.3.6.7	No common buttons shall be used for various control action from pendant control and radio remote control operation.	State
4.3.6.8	Push button station, metal enclosed, dust-tight and oil proof (IP 65) construction and robust design with 'start', 'stop', hoisting and lowering, with 'forward' and 'reverse' for travel motions.	State
4.3.6.9	Stop buttons lockable type.	State
4.3.6.10	An emergency push button with mushroom head shall be provided for cutting of power supply under emergency conditions.	State
4.3.6.11	The push button station shall be at a convenient height for operation from floor level and the multi-core control cables used for the push button station shall have suitable tough sheathing of PCP or equivalent materials.	State
4.3.6.12	The pendant cable shall have two (2) Nos. spare cores and two (2) Nos. separate cores for two distinct earthing.	State
4.3.6.13	The weight of pendant push button station shall be supported independent of the electric cable by means of a chain or wire rope.	State
4.3.6.14	The pendant shall have lighting switch, indication lamps for CONTROL 'ON' & POWER 'ON'.	State
4.3.6.15	Both Pendant push button and remote control shall be made from oil resistance material to avoid crude oil product effect on the components	State
4.3.6.16	Power supply to crabs and control systems shall be done using flexible flat cables	State
4.3.6.17	Power supply shall be 415V	State
4.3.6.18	Control voltage shall be 48V	State
4.3.6.19	Mains frequency shall be 50Hz	State
4.3.6.20	Motor shall be IP55 ingress protected	State
4.3.6.21	Hoist motor shall be induction type that will withstand stress due frequent start/stop.	State
4.3.6.22	Motor insulation shall be class H	State
4.3.6.23	Motors shall be Heavy duty reversible crane duty type	State
4.3.6.24	Motor operation mode shall be Continuous operating on load	State
4.3.6.25	Motor speed shall be variable as the crane operate in two speed at a time using one hoist motor cross transvers motors	State
4.3.6.26	Detailed electrical and control schematic diagrams shall be submitted with tender for evaluation purposes.	Attach
5	MARKING, LABELLING AND PACKING	
5.1	MARKING	

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Authorized by: , E/plant Workshop Engineer

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**TITLE: SPECIFICATIONS FOR
ELECTRIC OVERHEAD TRAVELLING
CRANE OF 5 TONS**

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Clause number	KPLC Requirement	Bidder's offer
5.1.1	The following information shall be marked legibly and in a permanent manner on the Electric Overhead Travelling Crane:	
a)	The manufacturer's name or trade mark;	State
b)	Type, model and serial number;	State
c)	Nominal input voltage and Frequency	State
d)	Individual loads ratings of motors	State
e)	Total Power (kW) Consumption	State
f)	Lifting capacity	State
g)	Letters "PROPERTY OF KENYA POWER"	State
h)	The instructions for handling and use (in the English Language).	State
5.2	PACKING	
5.2.1	The electric overhead crane shall be packed to protect it from damage during transportation, handling and storage.	State
	APPENDICIES	
A:	TESTS AND INSPECTION (Normative)	
A.1	Electric overhead crane shall be inspected and tested in accordance with the requirements of this specification and international standards. It shall be the responsibility of the manufacturer to perform or to have performed all the tests. Tenderers shall confirm the manufacturer's capabilities in this regard when submitting tenders. Any limitations shall be clearly specified.	State
A.2	Electric overhead crane shall be subject to acceptance tests at the manufacturer's works before dispatch. Three Engineers appointed by KPLC shall witness acceptance tests	State
A.3	On receipt of the Electric overhead crane, Kenya Power will inspect them and may perform or have performed any of the relevant tests in order to verify compliance with the specification. The supplier shall replace without charge to Kenya Power, any part of Electric overhead crane that upon examination, test or use fail to meet any or all of the requirements in the specification.	State
B:	QUALITY MANAGEMENT SYSTEM (Normative)	
B.1	The supplier shall submit a quality assurance plan (QAP) that will be used to ensure that the Electric overhead crane physical properties, tests and documentation, will fulfill the requirements stated in the contract documents, standards, specifications and regulations. The QAP shall be based on and include relevant parts to fulfill the requirements of ISO 9001: 2015.	State
B.2	The Manufacturer's Declaration of Conformity to applicable standards and copies of quality management certifications including copy of valid and relevant ISO 9001:2015 certificate shall be submitted with the tender for evaluation.	State

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Clause number	KPLC Requirement	Bidder's offer
B.3	The bidder shall indicate the delivery time of the crane, manufacturer's monthly & annual production capacity and experience in the production of the Electric overhead crane being offered. A detailed list & contact addresses (including e-mail) of the manufacturer's previous customers for similar type of the Electric overhead crane sold in the last five years as well as reference letters from at least four of the customers shall be submitted with the tender for evaluation.	State
C:	DOCUMENTATION AND DEMONSTRATION (Normative)	
C.1	The bidder shall submit its tender complete with technical documents for tender evaluation. The technical documents to be submitted (all in English language) for tender evaluation shall include the following:	
a)	Fully filled clause by clause guaranteed technical particulars (GTP) signed by the manufacturer;	State
b)	Copies of the Manufacturer's catalogues, brochures, drawings giving all relevant dimensions, schematic diagram and technical data;	State
c)	Sales records for the last five years and at least four customer reference letters;	State
d)	Details of manufacturing capacity and the manufacturer's experience;	State
e)	Manufacturers letter of authorization, ISO 9001 certificate, and other technical documents required in the tender.	State
f)	Manufacturer's warranty and guarantee; subject to 12 months from date of commissioning to KPLC site	State
g)	Operational manual.	State
h)	Service manual.	State
C.2	The successful bidder (supplier) shall submit the following documents/details to The Kenya Power & Lighting Company for approval before manufacture:	
a)	Fully filled clause by clause guaranteed technical particulars (GTP) stamped and signed by the manufacturer;	State
b)	Drawings of the Electric overhead crane to be manufactured for KPLC.	State
c)	Schematic drawings of the crane control systems and instrumentation with reference of the relevant international standards followed for the design and construction of the crane and its components/material	State
d)	General arrangement plan, section of main and sub-assemblies, with detailed dimensions of the crane and the size of each and every part of the equipment to be supplied under this specification	State
e)	Complete list of accessories and auxiliaries with their make and accompanied with catalogue/pamphlets/literature/write-ups	State
f)	Product manuals, operation manuals and brochures,	State
g)	Quality assurance plan (QAP) that will be used to ensure that the design, material; workmanship, tests, service capability, maintenance	State

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Clause number	KPLC Requirement	Bidder's offer
	and documentation will fulfill the requirements stated in the contract documents, standards, specifications and regulations. The QAP shall be based on and include relevant parts to fulfill the requirements of ISO 9001.	
h)	All documentation necessary for safety of the plant.	State
i)	Packaging details (including packaging materials).	State
C.3.	The supplier shall submit recommendations for use, care, storage and routine inspection/testing procedures, all in the English Language, during delivery of the Electric overhead crane to KPLC.	State
C.4.	The successful bidder shall demonstrate to KPLC Staff (at KPLC Nakuru deport) the operation of the Electric overhead crane.	State

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Manufacturer's Name, Signature, Stamp and Date

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