



The Kenya Power & Lighting Co. Ltd.
Central Office – P.O. Box 30099, Nairobi, Kenya
 Telephone – 254-02-3201000-Telegrams 'ELECTRIC'- www.kenyapower.co.ke
 Stima Plaza, Kolobot Road

Our Ref: KP1/6A.1/PT/3/19/A72

31st December, 2019

Dear Sir/ Madam

**CLARIFICATION No.3 OF BIDDING DOCUMENT FOR ICB NO: KP1/6A.1/PT/3/19/A72
 PROCUREMENT OF DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF
 TRANSMISSION SUBSTATION AND LINES (AFD) PROJECT DATED 20TH AUGUST 2019.**

CLARIFICATION TO BID DOCUMENT

The following responses are made to clarifications sought on various issues in the bidding document for procurement of transmission substations and lines and associated attachments.

No.	Bidders Query/Comment	KPLC Response
1.	<p>Monopoles: "Reply to below mentioned query (point no. 187 of clarification-1) is not clear. Please clarify. As per Tender Specification Volume II, Part 2, Section VII, Clause 36.1.7, The minimum ground clearances of conductors for 33kV poles is given as 6.4m. We are considering the above value for 33kV D/C steel monopoles as well. Request you to please confirm. The Minimum clearance of live parts to towers for 33kV D/C steel monopoles are not provided. Request you to please furnish above data."</p>	<p>6.4m is the minimum ground clearance. 33KV line actual ground clearance is in the scope of detailed design by the contractor based on detailed geotechnical investigation</p> <p>Refer to clause 28.2 on design data for HV and MV equipment</p>
2.	<p>Monopoles: "As per Tender Specification Volume II- Part 2- Section VII- clause 9.8- Appendix 9.A2, The Minimum Ground clearances of conductors above other Power lines is given as 3.2m. We are considering the 3.2m as adequate working clearance to be maintained between 132kv and 33kv Lines. Request you to please confirm."</p>	<p>Adequate working clearance shall be maintained between 132kv and 33kv Lines to ensure work can be carried out on the 33kv lines without switching off the 132kv line as per internally acceptable standards and best engineering practises.</p>
3.	<p>Monopoles: "As per Tender Specification Volume II- Part 2- Section VII- clause 25.2, it is mentioned that Monopoles shall have polygonal cross section of 8 sides, continuously tapered with</p>	<p>This shall be as per issued bidding document and clarification No. 1</p>

No.	Bidders Query/Comment	KPLC Response
	<p>longitudinal automatic arc welding as per AWS D.1.</p> <p>However, if we design monopole with 12 sides then it is economical as compared to 8 sided monopoles.</p> <p>Request you to please confirm whether we can design monopole with 12 sides."</p>	
4.	<p>Mitigation measures for safe working clearance "With reference to reply to point-287 of clarification-1, it is mentioned to refer clause 25.2 on monopole design & tower height design calculation. Moreover, information provided is a guidance for bidding purpose only.</p> <p>However, as per ""Specification part-2 : Specification for Environmental, social, health & safety management of the work"" it is mentioned that monopole to be used will be over 27m tall hence creating a safe working clearance in the ground as a mitigation measure for safety concern for hanging conductor.</p> <p>Because of this requirement, monopole bottom conductor height will be (i.e. 27m + max. sag) & total height of monopole will be too high. Because of which monopole weight will be heavier and uneconomical. Kindly confirm whether our understanding for calculating bottom conductor height is correct?"</p>	<p>Please refer to second part of the answer provided in clarification No.1</p> <p>"Tower Height and Type is in the scope of detailed design by the contractor based on detailed geotechnical investigation, and considering the design loads and conditions and applying the required safety of factors".</p>
5.	<p>Factor of Safety for tower design: "As per Tender Specification Volume II, Part 2, Section VII, Clause 10.2.5 & 11.2, there is mismatch in factor of safety mentioned for tower design. In second paragraph of clause 10.2.5, it is mentioned as 2.5 & 1.25 for Normal & broken wire condition respectively. However, in next paragraph it is mentioned as 2.5 & 1.5 for normal & broken wire condition respectively. The same is mentioned in schedule-3 (GTP for towers). Moreover, as per clause 11.2, it is mentioned that factor of safety of 2.5 & 1.25 to be considered for Normal & broken wire condition respectively.</p> <p>Request you to please clarify factor of safety to be considered for tower design."</p>	<p>Refer to clarification No.2: Factor of safety to be adopted under broken wire condition.</p>
6.	<p>Minimum member thickness for tower design: "As per Tender Specification Volume II, Part 2, Section VII, Clause 10.2.6, it is mentioned that minimum thickness of leg & lower member of cross arm shall be 6mm whereas for other members it shall be 5mm. However, as per schedule-3, Guaranteed technical particulars for tower, it is mentioned that minimum thickness for</p>	<p>Refer to clause 17.11.1 and follow as per clarification No. 1</p>

No.	Bidders Query/Comment	KPLC Response
	<p>leg (8mm), crossarm lower member (8mm) bracing & other members (6mm). Moreover as per client's reply to point no. 72 of clarification-1, it is mentioned that, "this shall be as specified in the guaranteed technical particulars schedule no.3 for lattice towers & foundations". We feel that tower design will become heavy & uneconomical if we follow requirement as mentioned in GTP for tower. We should consider minimum member thickness as per clause 10.2.6. Kindly confirm."</p>	
7.	<p>Minimum clearance of live parts to towers: As per Tender Specification Volume II, Part 2, Section VII, APPENDIX 9.A2, Page 45, The minimum electrical clearances of live parts to earthed structures for the project shall be as follows: As per Tender Specification Volume II, Part 2, Section VII, Clause 24.8, APPENDIX 24.B2, Page 276, The minimum electrical clearances of live parts to earthed monopole structure shall be as follows: For same 132kV line in both lots different values of clearances to live metal parts are provided. Request you to please clarify which set of clearance values need to be considered for 132kV tower and monopole designs.</p>	<p>Follow as specified in Appendix 9.A2 and 24.B2, the minimum clearance of Live parts with respect to earthed Lattice tower and Monopole tower respectively.</p>
8.	<p>Schedule 3: Guaranteed technical particulars for lattice towers: "Reply to point no. 211 (clarification-1) is not clear in which clarifications for below mentioned query was requested. With reference to schedule-3 furnished in the specification, please confirm whether details given in Employer requirement for the following item are minimum required & needs to be maintained or we can keep as per optimum tower/foundation design.</p> <ol style="list-style-type: none"> 1. Width of tower body at top cross arm & lowest cross arm level 2. Foundation depth 3. Width of base pad 4. Thickness of base pad 5. Width of column <p>6. Stub section & stub length for tower type - S & H is mentioned as 110x110x12 & 150x150x12 respectively. We understand that above values given are typo error and we can keep as per tower/foundation design. Kindly confirm."</p>	<p>Given parameters are minimum requirements in addition to consideration of required design safety factors.</p> <p>Follow as required in schedule 3 of Guaranteed technical particulars for lattice towers and foundations.</p>

No.	Bidders Query/Comment	KPLC Response
9.	<p>"As per clause 11.2 on page-54 it is mentioned that " The minimum thickness of the edges of base pad shall be not less than 300mm"". In thin regard, please clarify for the points given below.</p> <p>1. Due to 300mm minimum thickness requirement of base pad, foundation will become heavy and volume will be increased. Generally as transmission line practice, we keep minimum thickness of base slab as 250mm. We propose to keep slab thickness based on foundation design which will eventually reduce overall concrete volume.</p> <p>Kindly confirm whether we can keep minimum base pad thickness as 250mm.</p> <p>2. Moreover, generally we keep minimum thickness of edge of base pad (slab) 100mm as transmission line practice. Kindly confirm whether we can keep minimum edge thickness of base pad as 100mm keeping total base pad thickness as 250mm. "</p>	<p>Follow as specified in the issued bidding document, clarifications No.1&2 and amendment No.3</p>
10.	<p>Clarification No.1, item No.106.</p> <p>"Kindly clarify the following ; "does the employer accept bidders whose Occupational Health & Safety Management systems are certified according with OSHAS 18001:2007 standard as long as requested in the document ''section III. Evaluation and qualification Criteria (without prequalification) pg.48"</p>	<p>Answer to item No. 106, has been revised to read as follows: ISO 18001 or 45001 shall apply</p>
11.	<p>Clarification No.1, item No.76: "Please note the specification calls for all the major equipment submit type test reports along the bid. So we request you to confirm the time period for valid type test reports for Power transformer, GIS and MV switchgear & all outdoors equipment i.e DIS, CT, CVT and SA".</p>	<p>Answer to item No. 76 has been revised to read as follows: Type test report or certified copy of the type test by accredited body shall have been carried out at least Six (6) months to closing/opening date of this tender.</p>

Yours faithfully,
For: KENYA POWER & LIGHTING COMPANY LIMITED.


JOYCE OCHIENG
Ag. GENERAL MANAGER, SUPPLY CHAIN