

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE

Loan No. and Title: 4520-NEP: SASEC - Electricity Transmission and Distribution Strengthening Project

OCB No. and Title: NEA/PMD/ETDSP/LAMSS-081/82-01, Procurement of Plant for Design, Supply, Installation, Testing and Commissioning of 400/220/132/33/11kV GIS Substation at Lamahi, Dang

Clarification - I

S.No	Vol./Chapter/Clause / Page no. of Bidding Document	Specification	Queries of Prospective Bidder	Employer's Response
1	Volume I Evaluation and Qualification Criteria Item No. 1, Criteria No. (v)		The type test reports are required for power transformers of the similar or higher capacity but for same voltage level (for 420kV, 245kV, and 145kV). However, we respectfully propose that similar or higher voltage levels shall also be accepted as per general practice in qualification evaluation	No changes will be made.
2	Volume II Chapter 18,Transformer upto 400kV class, Clause 3.13 and Annexure -C, Clause 12	CHAPTER-18: TRANSFORMER (UPTO 400kV CLASS) 3.13 Dynamic Short Circuit Test requirement 3.13.1 For 400kV/220kV/132kV Class Auto/Power transformers The Contractor/Manufacturer must have successfully carried out the Dynamic Short Circuit (DSC) test on following type and sizes of transformers as per IEC over last 15 years period as on the actual date of bid opening from the accredited independent testing laboratory and submit the DSC test report for the following transformers: ❖ 420kV Voltage Class, three phase 500MVA auto transformer ❖ 245kV Voltage Class, three phase 315MVA auto transformer ❖ 145kV Voltage Class, three phase 63MVA power transformer ❖ 36kV Voltage Class, three phase 24MVA power transformer If the bidder fails to submit the Dynamic Short Circuit (DSC) test report of the offered sizes and voltages of the Auto/Power Transformers, then the contractor/manufacturer must have to carry out Dynamic Short Circuit (DSC) test on the above-mentioned voltage levels and sizes of the auto/power transformers. 12. Dynamic short circuit withstand test shall be carried out as per IEC 60076-5. Dynamic short circuit test shall be carried out in HV-LV combination at nominal & extreme tap positions. For LV-winding, dynamic short circuit shall be carried out either on HV-LV or LV-LV combination, whichever draws higher short circuit current as per calculation. Type tests shall be carried out before short circuit test. Following shall also be conducted before and after Short Circuit test: i) Dissolved gas analysis ii) Frequency response analysis iii) All routine tests Detail test procedure shall be submitted by contractor & shall be approved before short circuit test.	Do all the products undergo short-circuit tests? If a similar report with higher capacity transformer with the same voltage level that meets the requirements can be provided, shall DSC test need to be conducted during the execution?	If the bidder fails to submit the Dynamic Short Circuit (DSC) test report of the offered sizes with same voltage level of Auto/Power Transformers, then the bidder must provide a commitment letter along with the Bid that the Dynamic Short Circuit (DSC) test shall be performed by the bidder on offered sizes with same voltage level of the Auto/Power Transformers without any extra cost to employer at the independent accredited laboratory. One/One Transformer from the below mentioned list shall undergo DSC if the bidder fails to submit the Dynamic Short Circuit (DSC) test report of the offered sizes with same voltage level of Auto/Power Transformers: ❖ 420kV Voltage Class, three phase 500MVA auto transformer ❖ 245kV Voltage Class, three phase 315MVA auto transformer ❖ 145kV Voltage Class, three phase 63MVA power transformer ❖ 36kV Voltage Class, three phase 24MVA power transformer



[Handwritten signature]

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE

Loan No. and Title: 4520-NEP: SASEC - Electricity Transmission and Distribution Strengthening Project

OCB No. and Title: NEA/PMD/ETDSP/LAMSS-081/82-01, Procurement of Plant for Design, Supply, Installation, Testing and Commissioning of 400/220/132/33/11kV GIS Substation at Lamahi, Dang

Clarification - I

S.No	Vol./Chapter/Clause / Page no. of Bidding Document	Specification	Queries of Prospective Bidder	Employer's Response																																																
3	Volume II, Chapter 2, GTR , Page no. 3 Volume II, Chapter 18,Transformer upto 400kV class, Page no. 43	4.6 System Parameter <u>400kV & 220kV System</u> <table><tr><th>S.N.</th><th>Description of parameters</th><th>400kV System</th><th>220kV System</th></tr><tr><td>1.</td><td>System operating voltage</td><td>400kV</td><td>220kV</td></tr><tr><td>2.</td><td>Rated operating voltage of the system (rms)</td><td>420kV</td><td>245kV</td></tr><tr><td>3.</td><td>Rated frequency</td><td>50Hz</td><td>50Hz</td></tr><tr><td>4.</td><td>No. of phase</td><td>3</td><td>3</td></tr><tr><td>5.</td><td>Rated Insulation levels</td><td></td><td></td></tr><tr><td>i)</td><td>Full wave impulse withstand voltage (1.2/50 microsec.)</td><td>1550kVp</td><td>1050kVp</td></tr><tr><td>ii)</td><td>Switching impulse withstand voltage (250/2500 micro sec.) dry and wet</td><td>1050kVp</td><td>*</td></tr></table> Bidding Documents for Design, Supply, Installation, Testing and Commissioning of 400/220/132/33/11 kV GIS Substation at Lamahi, Dang Page 3 of 29 <table><tr><th></th><th>LV</th><th>KV</th><th>31.5</th></tr><tr><td>ii.</td><td>Lightning Impulse withstand Voltage</td><td></td><td></td></tr><tr><td></td><td>HV</td><td>kVp</td><td>1300</td></tr><tr><td></td><td>IV</td><td>kVp</td><td>950</td></tr></table>	S.N.	Description of parameters	400kV System	220kV System	1.	System operating voltage	400kV	220kV	2.	Rated operating voltage of the system (rms)	420kV	245kV	3.	Rated frequency	50Hz	50Hz	4.	No. of phase	3	3	5.	Rated Insulation levels			i)	Full wave impulse withstand voltage (1.2/50 microsec.)	1550kVp	1050kVp	ii)	Switching impulse withstand voltage (250/2500 micro sec.) dry and wet	1050kVp	*		LV	KV	31.5	ii.	Lightning Impulse withstand Voltage				HV	kVp	1300		IV	kVp	950	18-00-Transformer upto 400kV class- Lamahi SS Specification Page 43 and specification 2. Chapter-GTR Page 3. There is a conflict between the lightning impulse requirements for the substation system and the transformer specified in the bid documents. Please clarify/confirm the lightning impulse level for the transformer.	It shall be as per the Bid Document.
S.N.	Description of parameters	400kV System	220kV System																																																	
1.	System operating voltage	400kV	220kV																																																	
2.	Rated operating voltage of the system (rms)	420kV	245kV																																																	
3.	Rated frequency	50Hz	50Hz																																																	
4.	No. of phase	3	3																																																	
5.	Rated Insulation levels																																																			
i)	Full wave impulse withstand voltage (1.2/50 microsec.)	1550kVp	1050kVp																																																	
ii)	Switching impulse withstand voltage (250/2500 micro sec.) dry and wet	1050kVp	*																																																	
	LV	KV	31.5																																																	
ii.	Lightning Impulse withstand Voltage																																																			
	HV	kVp	1300																																																	
	IV	kVp	950																																																	



[Handwritten signature]

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE

Loan No. and Title: 4520-NEP: SASEC - Electricity Transmission and Distribution Strengthening Project

OCB No. and Title: NEA/PMD/ETDSP/LAMSS-081/82-01, Procurement of Plant for Design, Supply, Installation, Testing and Commissioning of 400/220/132/33/11kV GIS Substation at Lamahi, Dang

Clarification - I

S.No	Vol./Chapter/Clause / Page no. of Bidding Document	Specification	Queries of Prospective Bidder	Employer's Response																																																				
4	Volume II, Chapter 18,Transformer upto 400kV class	I Technical Particulars / Parameters of Transformers (220/132/33 kV, 3-Phase Auto Transformer) <table border="1"> <thead> <tr> <th>Cl. No.</th><th>Description</th><th>Unit</th><th>TECHNICAL PARAMETERS</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Rated Capacity</td><td></td><td></td></tr> <tr> <td></td><td>HV</td><td>MVA</td><td>315 180</td></tr> <tr> <td>2.</td><td>Voltage ratio (HVLV) (Line to line)</td><td>kV</td><td>220/132 /33</td></tr> <tr> <td>3.</td><td>Single / Three Phase Design</td><td></td><td>THREE</td></tr> <tr> <td>4.</td><td>Applicable Standard</td><td></td><td>IEC 60076</td></tr> <tr> <td>5.</td><td>Frequency</td><td>Hz</td><td>50</td></tr> <tr> <td>6.</td><td>Cooling & Percentage Rating at different cooling</td><td></td><td>ONAN/ONAF/(OFAF or ODAF) : 60% / 80%/100% OR ONAN/ONAF1/ONAF2: 60% / 80%/100%</td></tr> <tr> <td>7.</td><td>Type of Transformer</td><td></td><td>Constant Ohmic impedance type (Refer Note1)</td></tr> <tr> <td>8.</td><td>HV-LV Impedance at 75 Deg C</td><td></td><td></td></tr> <tr> <td>i)</td><td>Max. Voltage tap</td><td>%</td><td>10.3</td></tr> <tr> <td>ii)</td><td>Principal tap</td><td>%</td><td>12.5</td></tr> <tr> <td>iii)</td><td>Min. Voltage tap</td><td>%</td><td>15.4</td></tr> </tbody> </table>	Cl. No.	Description	Unit	TECHNICAL PARAMETERS	1.	Rated Capacity				HV	MVA	315 180	2.	Voltage ratio (HVLV) (Line to line)	kV	220/132 /33	3.	Single / Three Phase Design		THREE	4.	Applicable Standard		IEC 60076	5.	Frequency	Hz	50	6.	Cooling & Percentage Rating at different cooling		ONAN/ONAF/(OFAF or ODAF) : 60% / 80%/100% OR ONAN/ONAF1/ONAF2: 60% / 80%/100%	7.	Type of Transformer		Constant Ohmic impedance type (Refer Note1)	8.	HV-LV Impedance at 75 Deg C			i)	Max. Voltage tap	%	10.3	ii)	Principal tap	%	12.5	iii)	Min. Voltage tap	%	15.4	According to specification 18-00-Transformer upto 400kV class- Lamahi SS page 43, regarding the voltage of Trx: HV is 220kV, IV is 132kV, LV is 33kV; The impedance in the table should be for HV/IV (230kV/132kV). Please confirm changing "HV-LV Impedance at 75 °C" to "HV-IV Impedance at 75°.	Confirmed
Cl. No.	Description	Unit	TECHNICAL PARAMETERS																																																					
1.	Rated Capacity																																																							
	HV	MVA	315 180																																																					
2.	Voltage ratio (HVLV) (Line to line)	kV	220/132 /33																																																					
3.	Single / Three Phase Design		THREE																																																					
4.	Applicable Standard		IEC 60076																																																					
5.	Frequency	Hz	50																																																					
6.	Cooling & Percentage Rating at different cooling		ONAN/ONAF/(OFAF or ODAF) : 60% / 80%/100% OR ONAN/ONAF1/ONAF2: 60% / 80%/100%																																																					
7.	Type of Transformer		Constant Ohmic impedance type (Refer Note1)																																																					
8.	HV-LV Impedance at 75 Deg C																																																							
i)	Max. Voltage tap	%	10.3																																																					
ii)	Principal tap	%	12.5																																																					
iii)	Min. Voltage tap	%	15.4																																																					
5	Volume II, Chapter 1,Project specific Requirements		Please clearly specify the altitude of the power station: 1420m from MSL.	The altitude of proposed Lamahi Substation is 245 m and for New Butwal SS is 142 m above MSL.																																																				
6	Volume II, Chapter 18,Transformer upto 400kV class		Please clarify the capacity, impedance value and target loss {or loss limit) of the third winding of the 315MVA/220kV autotransformer.	i) Loading capacity (Active and Reactive combined) of the tertiary winding shall be one third (1/3 rd) of rated capacity of HV winding. Tertiary winding shall be suitable for operation under unloaded conditions as well. ii) Impedance value shall be decided by the Bidder at their own considering the IEC standards, Technical Specification and Data Sheet provided in the TS. Please note that the Functional Guarantee (Using FUNC Form) of the power transformers shall be submitted along with the bid to reach at the evaluated bid price using loss capitalization formula as per EQC.																																																				

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE

Loan No. and Title: 4520-NEP: SASEC - Electricity Transmission and Distribution Strengthening Project

OCB No. and Title: NEA/PMD/ETDSP/LAMSS-081/82-01, Procurement of Plant for Design, Supply, Installation, Testing and Commissioning of 400/220/132/33/11kV GIS Substation at Lamahi, Dang

Clarification - I

S.No	Vol./Chapter/Clause / Page no. of Bidding Document	Specification	Queries of Prospective Bidder	Employer's Response
7	Volume II, Chapter 18,Transformer upto 400kV class		Please specify whether there are any limitations on the size and weight of the transformer.	Shall be finalized during the detail engineering. Bidders shall ensure that the manufactured transformers must meet IEC Standards, Technical Specifications and Technical Particulars / Parameters of Transformers (Power/Auto) provided in the Bid document. The Bidder shall acquaint themselves with the topography, infrastructure (road, bridge etc.) situation for transportation of the Power Transformers.
8	Common		After review the tender documents, we did not find any GTP format. Please clarify on it.	The technical specifications have not been provided in GTP format. Bidders shall ensure the equipment to be supplied under the bid shall fully comply with the IEC standards, Technical Specifications and Technical Particulars/Parameters of Transformers provided in the Bid document.
9	Common		For OPGW, here we do not find any specification. Please clarify on it.	The technical specifications of OPGW is supplemented.

NEPAL ELECTRICITY AUTHORITY
PROJECT MANAGEMENT DIRECTORATE

Loan No. and Title: 4520-NEP: SASEC - Electricity Transmission and Distribution Strengthening Project

OCB No. and Title: NEA/PMD/ETDSP/LAMSS-081/82-01, Procurement of Plant for Design, Supply, Installation, Testing and Commissioning of 400/220/132/33/11kV GIS Substation at Lamahi, Dang

Clarification - I

S.No	Vol./Chapter/Clause / Page no. of Bidding Document	Specification	Queries of Prospective Bidder	Employer's Response
13	Volume III, Schedule I, Sl.No. C 1.7(a)	SF6 Gas Insulated Bus Duct (GIB) outside GIS Hall alongwith associated support structure and accessories (for Line bays) 1750m	1750m, for Line bays or for Line, Transformers & Reactors	1750m GIB Duct corresponds to the GIB Duct for all the line bays, transformer bays, Reactor Bays and Future Bays upto GIS to AIS bushing. The GIB Duct quantity is the estimate quantity only and the actual length shall be decided during Detail Engineering.
14	Volume III, Schedule I, Sl.No. C 1.8(a)	420kV, SF6 to Air Bushing alongwith associated support structure (for Line, Transformers & Reactors) 33nos	not consistent with the drawing	It shall be decided during detail engineering.



