

Title	:	Pre Bid Clarifications –III
Owner	:	J&K Power Development Department, J&K
Employer	:	REC Transmission Projects Company Limited
Project	:	Design, Manufacturing, Supply, Erection, Testing & Commissioning of 160 MVA, 220/33-33 kV Gas Insulated Substation (GIS) at Lassipora on Turnkey Basis associated with Strengthening of Transmission System of JKPDD under PMDP Scheme-15”.
Tender Ref No.	:	RECTPCL/PIA/JKPDD/SS -02

SL. NO.	CLAUSE / DWG NO.	REFERENCE / EXISTING CLAUSE	QUERY DESCRIPTION	Employer’s Reply to Bidder
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CLARIFICATION ON TECHNICAL SPECIFICATIONS:-				
1.	Tender SLD	Detail A for neutral formation	In the furnished SLD “Detail A’, only one LV neutral formation is indicated, we understand that separate neutral formation is to be done for both LV-1 and LV-2 of offered three-winding Power transformer. Please confirm.	Bidder may note that, Attached SLD with Technical specification is indicative. However your understanding that Separate LV neutral formation is required to be done is in order.
2.	Section-I, cl. No. 4.1.1.c Schedule-I item no. B.1.c, C.1.d	220kV and 33kV Auxiliary Bus module to connect spare unit..	As per price schedule and section project, 220kV and 33kV Auxiliary bus module is to be considered for connection of spare transformer however the same is not indicated in furnished SLD.	Bidder may note that, Clause No-4.1.1(c), Section – I, Vol-II and Price Schedule-1, item no. B.1.c is related to 220kV Auxiliary Bus module unit only to connect spare transformer whereas Item no. C.1.d is related to Auxiliary transformer or LT Transformer bay module and not linked with spare unit connection. Please note that 33kV side of Power transformer is connected with HT Power cables to GIS. In case of spare transformer, Power cables will be connected on LV side of spare transformer and other side of the cables shall be kept ready for connection with any phase in GIS as detailed in clause no. 4.1.3 (h) of Section 1 Project, Vol-II.
3.	Schedule-I item no. E.1.c	Shifting and re-erection of existing panel of Mirbazar and Wagoora substation	Please clarify the work involved for shifting and re-erection of existing panel of Mirbazar and Wagoora substation. We understand that offered DPC is to be mounted in existing panel at Mirbazar and	Bidders are requested to visit site and access the requirement for DPC and quote accordingly.

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			Wagoora end. Supply of new panel for DPC at remote end is not in bidder’s scope. Please confirm.	
4.	Section-I, cl. No. 4.1.3.d Section-IV, cl. No. 3.09	For 33kV system, one BCU for two bays..... All numerical relays shall communicate to station SAS on IEC-61850 communication protocol. It is envisaged that these protection IEDs shall be used for CB control & monitoring of bay equipment.	As per section project, 1 no. BCU can be provided for 2 nos. 33kV feeders whereas in 33kV switchgear specification Bay control cum protection (BCPU) IED can be offered for feeders. Thus, we have considered BCPUIED for each 33kV feeders to meet the protection requirement. Please confirm.	Bidders may refer Amendment-5 in this regard.
5.	Section-IV, cl. No. 3.09.02 Section-I Annexure-I item no. VIII. 1.3	Numerical Line Protection Relay The relay shall have instantaneous as well as time delayed three over current (50) and one earth fault (50N) protection elements... Numerical distance relay Main I for 33kV : Set 1	As per 33kV line feeder protection requirement, O/C & E/F protection to be provided whereas under list of mandatory spares, distance protection IED is mentioned. We have not considered 33kV feeder distance relay as the same is not applicable. Please confirm.	Noted & Confirmed
6.	Section-I, cl. No. 4.1.3.e	For 33kV GIS Bays, the requirement & specification for complete control and protection system shall be as specified in Section-IV of Tech. Specs.	As per section project, 33kV relay and protection system shall be as per Section-IV (33kV GIS switchgear specification). Thus, 33kV feeders control and relay panel configuration mentioned under section 18 (control and protection spec) is not considered. Please confirm.	Noted & Confirmed

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7.	Section XVIII, Clause 33	CONTROL PANEL	We have not considered conventional control panel for 220kV and 33kV feeders since BCU based system is offered in line with section project and price schedule. Please confirm.	Bidder may note that, Swing Frame Panel with Glass Door shall be required in line with TS requirement.
8.	Section XVIII, Clause 27	WEATHER PROOF RELAY PANELS	Please confirm this item is not applicable for this project	Bidder may note that, this item is not applicable.
9.	Section XVIII, Clause 26	BUS BAR PROTECTION	We have considered centralized low impedance busbar protection for 220kV system. Please confirm.	Bidders may refer Amendment-5 in this regard.
10.	Section XVIII, Clause 22	TEE protection	TEE protection not considered in scope since 220kV system is with Double Main bus scheme. Please confirm.	Bidder may note that, TEE is not applicable here.
11.	Section XVIII, Clause 33	Configuration of relay and protection panels	We have not envisaged any ABT/Non ABT/ Tariff meter for offered 220kV and 33kV feeders. Only cutout, wiring and TTB for owner supplied 1 no. meter shall be considered offered CRP and 33kV switchgear. Please confirm.	Bidders may refer Amendment-5 in this regard.
12.	Section XIX, Clause 1.2	Existing RSCC	We have not considered any modification works/augmentation works at RSCC in present scope of works, bidder’s scope is limited to providing the data up to substation gateway for interface with existing RSCC. Please confirm. Also, please share the details of existing RSCC like make, type , etc.	Bidders may note that, Bidder’s scope is limited to providing the data up to substation gateway under present scope of work.
13.	Section XIX, Clause	LIST OF EQUIPMENTS	We have considered A4 type colour printer	Noted

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	14, vi		present scope. Please confirm.	
14.	Section-XX Transformer specification cl. No. 14.2	Cabling of spare unit with isolator switching arrangement shall be in such a way that spare unit of transformer can be connected in place of faulty unit without physically shifting and all the control, protection, indication signals of spare unit shall be brought in common marshalling box of all the banks.	We have not envisaged switching of spare transformer unit through isolator as the same is not mentioned in section project nor listed in price schedule. We understand that spare ICT shall be manually connected to switched phase. Please confirm.	Bidders are requested to refer our reply at Sr. No. 2.
15.	Section-XX Transformer specification, Annexure-G	Bushing CT details not available.	Please furnish the bushing CT requirement for 1-Ph 53.33MVA, 22/33/33kV Transformer as the same is not mentioned in Annexure-G of Transformer specification.	Bidders may refer Amendment-5 in this regard.
16.	Section-XX Transformer specification, Annexure-G	Neutral CT requirement	Please clarify whether external NCT is required to be provided for HV and LV side of Power Transformer, incase required then please revise the price schedule and furnish the CT details accordingly.	Bidders may note that, External NCT are required in line with specification requirement and CT details are mentioned in Sl no-15.
17.	Section XXI, cl. No. 1.1	Teleprotection & PMUs and for new technological requirements of Power System Operation such as Special Protection Scheme, Grid Security Expert System, Load Management.....	PMU supply and its integration to LDC/PDC is not considered in bidder’s scope. Please confirm.	Bidders may note that, PMU supply is neither applicable and nor in bidders scope.
18.	Single Line diagram, 160MVA,	Surge arrestor in 33kV GIS Transformer bay module	We observed that no surge arrestor has been shown either GIS type or AIS type for	Bidders may note that, 33kV Surge arrestors are required for line feeders only and

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	220/33kV GIS S/s at Lassipora		220/33kV Transformer feeder module of 33kV GIS, hence same is not envisaged by us. Please confirm.	provision has been made accordingly.
19.	Section -1, Project. TECHNICAL SPECIFICATION, VOL-II, SEC-I Page 10 of 19	Sl. No. 4.1.3l) Auxiliary LT Transformers and associated equipment’s:- 250kVA, 33/0.433kV, Auxiliary Transformer with associated 36kV Isolators, with associated terminal connectors, Bus Post Insulators, conductor, clamps, connectors etc. complete in all respect for connection with GIS bay.	We observed that no surge arrestor has been shown either GIS type or AIS type for LT Transformer feeder module of 33kV GIS, hence same is not envisaged by us. Please confirm.	Bidders may note that, 33kV side of LT Transformer is directly connected to GIS through 33kV HT Cable, therefore, requirement of LA is not envisaged
20.	BPS, Schedule -1, Sl. No. C.2.ii	33kV Surge arrestors (1 Ph), 21 No.	Please note that 33kV Surge arrestors (1 Ph) qty. mentioned in BPS, 21 No. is not matching with the tender SLD. As per Single Line diagram, 160MVA, 220/33kV GIS S/s at Lassipora, only 18 No. 33kV Surge arrestors (1 Ph) is required. kindly confirm the requirement of 21 no. surge arrestors.	Bidders may refer Amendment-5 in this regard.
21.	General	33kV Cable	we understand that 33kV cable is Earthed grade. Please confirm.	Please refer Section 12. Clause no. 2
22.	Section -1, Project. TECHNICAL SPECIFICATION, VOL-II, SEC-I	Cl. No. 6.2 Meteorological data:- Min Ambient temperature -15deg. C	We would like to inform you to that due to min ambient temperature of -15 deg. C. condition snow fall accumulation will have an effect on outdoor equipment	Bidders may refer Amendment-5 in this regard.

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23.	Section -1, Project. TECHNICAL SPECIFICATION, VOL-II, SEC-I Page 14 of 19	Cl. No. 6.2 Meteorological data:- Min Ambient temperature -15deg. C	Kindly review & confirm the effect of thickness of ice loading to be considered for structural design (outdoor equipment structure, tower & gantries). This parameter shall impact overall pricing of the project. Hence a clear input from REC is must.	Bidders may refer Amendment-5 in this regard.
24.	General	Heating requirement	We understand that Oil Type heat convectors to be provided to maintain indoor room temperature to satisfactory operation of following rooms: - a) Battery room b). GIS hall temperature as per Annexure - III. c). Control Room d). SAS room Kindly confirm whether our understating is correct.	Bidders may refer Amendment-5 in this regard.
25.	Single Line diagram of 415V Main	Incomer Cable size from 33kV Switchboard – 3R, 1Cx300 sq. mm. AL	We understand that single core single run per phase 300 sq. mm. AL XLPE Cable from	Confirmed

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	Switch Board	XLPE Cable from 33kV Switchboard to 250kVA Station Transformer – 33kV Voltage grade	33kV Switchboard to 250kVA Station Transformer – 33kV Voltage grade to be considered by the bidder. Please confirm.	
26.	Single Line diagram of 415V Main Switch Board	Incomer Cable size from 250kVA Trafo. To 415V Main Switch board– 7R, 1Cx300 sq. mm. AL XLPE – 1.1kV Voltage grade	We understand that two run per phase, single core 300 sq. mm. AL XLPE Cable + 1 spare run from 250kVA Trafo. To 415V Main Switch board – 1.1kV Voltage grade to be considered by the bidder. Please confirm.	Confirmed
27.	Make List		Please provide approved make list which can be considered for all equipments.	Bidders are requested to refer Amendment-5 in this regard. Further, bidder is to propose makes based on qualification and/or other criteria mentioned in bidding documents.
CLARIFICATION WITH RESPECT TO CRP,SAS AND TELECOMMUNICATION EQUIPMENT:-				
28.	Tender SLD	Detail A for neutral formation	In the furnished SLD “Detail A’, only one LV neutral formation is indicated, we understand that separate neutral formation is to be done for both LV-1 and LV-2 of offered three-winding Power transformer. Please confirm.	Bidders are requested to refer reply at Sr. No. 1
29.	Section-I, cl. No. 4.1.1.c Schedule-I item no. B.1.c, C.1.d	220kV and 33kV Auxiliary Bus module to connect spare unit..	As per price schedule and section project, 220kV and 33kV Auxiliary bus module is to be considered for connection of spare transformer however the same is not indicated in furnished SLD.	Bidders are requested to refer reply at Sr. No. 2

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30.	Schedule-I item no. E.1.c	Shifting and re-erection of existing panel of Mirbazar and Wagoora substation	Please clarify the work involved for shifting and re-erection of existing panel of Mirbazar and Wagoora substation. We understand that offered DPC is to be mounted in existing panel at Mirbazar and Wagoora end. Supply of new panel for DPC at remote end is not in bidder’s scope. Please confirm.	Bidders are requested to refer reply at Sr. No. 3
31.	Section-I, cl. No. 4.1.3.d Section-IV, cl. No. 3.09	For 33kV system, one BCU for two bays..... All numerical relays shall communicate to station SAS on IEC-61850 communication protocol. It is envisaged that these protection IEDs shall be used for CB control & monitoring of bay equipment.	As per section project, 1 no. BCU can be provided for 2 nos. 33kV feeders whereas in 33kV switchgear specification Bay control cum protection (BCPU) IED can be offered for feeders. Thus, we have considered BCPU for each 33kV feeders to meet the protection requirement. Please confirm.	Bidders are requested to refer reply at Sr. No. 4
32.	Section-IV, cl. No. 3.09.02 Section-I Annexure-I item no. VIII. 1.3	Numerical Line Protection Relay The relay shall have instantaneous as well as time delayed three over current (50) and one earth fault (50N) protection elements... Numerical distance relay Main I for 33kV : Set 1	As per 33kV line feeder protection requirement, O/C & E/F protection to be provided whereas under list of mandatory spares, distance protection IED is mentioned. We have not considered 33kV feeder distance relay as the same is not applicable. Please confirm.	Bidders are requested to refer reply at Sr. No. 5
33.	Section-I, cl. No. 4.1.3.e	For 33kV GIS Bays, the requirement & specification for complete control and	As per section project, 33kV relay and protection system shall be as per Section-IV	Bidders are requested to refer reply at Sr. No. 6

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		protection system shall be as specified in Section-IV of Tech. Specs.	(33kV GIS switchgear specification). Thus, 33kV feeders control and relay panel configuration mentioned under section 18 (control and protection spec) is not considered. Please confirm.	
34.	Section XVIII, Clause 33	CONTROL PANEL	We have not considered conventional control panel for 220kV and 33kV feeders since BCU based system is offered in line with section project and price schedule. Please confirm.	Bidders are requested to refer reply at Sr. No. 7
35.	Section XVIII, Clause 27	WEATHER PROOF RELAY PANELS	Please confirm this item is not applicable for this project	Bidders are requested to refer reply at Sr. No. 8
36.	Section XVIII, Clause 26	BUS BAR PROTECTION	We have considered centralized low impedance busbar protection for 220kV system. Please confirm.	Bidders are requested to refer reply at Sr. No. 9
37.	Section XVIII, Clause 22	TEE protection	TEE protection not considered in scope since 220kV system is with Double Main bus scheme. Please confirm.	Bidders are requested to refer reply at Sr. No. 10
38.	Section XVIII, Clause 33	Configuration of relay and protection panels	We have not envisaged any ABT/Non ABT/Tariff meter for offered 220kV and 33kV feeders. Only cutout, wiring and TTB for owner supplied 1 no. meter shall be considered offered CRP and 33kV switchgear. Please confirm.	Bidders are requested to refer reply at Sr. No. 11
39.	Section XIX, Clause 1.2	Existing RSCC	We have not considered any modification works/augmentation works at RSCC in present scope of works, bidder’s scope is limited to providing the data up to	Bidders are requested to refer reply at Sr. No. 12

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			substation gateway for interface with existing RSCC. Please confirm. Also, please share the details of existing RSCC like make, type , etc.	
40.	Section XIX, Clause 14, vi	LIST OF EQUIPMENTS	We have considered A4 type colour printer present scope. Please confirm.	Bidders are requested to refer reply at Sr. No. 13
41.	Section-XX Transformer specification cl. No. 14.2	Cabling of spare unit with isolator switching arrangement shall be in such a way that spare unit of transformer can be connected in place of faulty unit without physically shifting and all the control, protection, indication signals of spare unit shall be brought in common marshalling box of all the banks.	We have not envisaged switching of spare transformer unit through isolator as the same is not mentioned in section project nor listed in price schedule. We understand that spare ICT shall be manually connected to switched phase. Please confirm.	Bidders are requested to refer reply at Sr. No. 14
42.	Section-XX Transformer specification, Annexure-G	Bushing CT details not available.	Please furnish the bushing CT requirement for 1-Ph 53.33MVA, 22/33/33kV Transformer as the same is not mentioned in Annexure-G of Transformer specification.	Bidders are requested to refer reply at Sr. No. 15
43.	Section-XX Transformer specification, Annexure-G	Neutral CT requirement	Please clarify whether external NCT is required to be provided for HV and LV side of Power Transformer, incase required then please revise the price schedule and furnish the CT details accordingly.	Bidders are requested to refer reply at Sr. No. 16
44.	Section XXI, cl. No. 1.1	Tele protection & PMUs and for new technological requirements of Power System Operation such as Special Protection Scheme,	PMU supply and its integration to LDC/PDC is not considered in bidder’s scope. Please confirm.	Bidders are requested to refer reply at Sr. No. 17.

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		Grid Security Expert System, Load Management.....		
45.	General	Numerical Relay Test Kit	We Understand that Numerical relay test kit is not to be considered by the bidder. Please confirm.	Bidders are requested to refer sr.no F a) in BPS Relay test Tool kit is provided Under this item, Numerical Relay Test kit and tool kit is covered.
46.	Price Schedule_ Schedule-1_ Sl. No. E.2	Tele protection Equipments	Due to limitation of technology DTTC equipment shall be installed near to SDH equipment within 40 meter range. If distance b/w these two is more than 40 meter than additional convertors are required. Please confirm that DTTC shall be installed in SDH Cubicles or near to SDH equipment within 40 meter.	Since the entire job of substation and Control Room Building is to be done by bidder, it is therefore expected from bidder to ensure in totality Tele-protection system as well as communication etc.
47.	Price Schedule_ Schedule-1_ Sl. No. P_B_4	Approach Cable & Accessories for Mirabazar & Wagoora	As Approach Cable are not required at Mirabazar & Wagoora Substation, we understand that same shall be provided by employer and splicing of Approach cable shall be in scope of employer. Please confirm our understanding.	Bidders are requested to visit site and access the requirement in totality and quote accordingly.
48.	TECHNICAL SPECIFICATION VOL-II, SEC-XXI TELECOMMUNICATION SYSTEMS / Cl. No. 1.1	A brief summary of the system requirements is as follows: (b) 64kbps & nx64kbps data channel support as required (c) Low speed (300 -1200 bps) data channel support as required	As per BPS bidder has to provide SDH equipment only. We understand that given interfaces of PDH equipment are not envisaged in current scope of work. Specification is provided for academic purpose only. Bidder has to quote as per BPS only. Please confirm our	Bidder scope is to provide the successful Telecommunication System under present scope.

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		(d) Voice (2 wires, 4 wires) channel support and integration with Employer’s/RLDC’s EPABX system. The details of EPABX System shall be provided during detailed engineering. (e) Data transport supporting Network Management channels	understanding.	
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49.	TECHNICAL SPECIFICATION VOL-II, SEC-XXI TELECOMMUNICATION SYSTEMS / Cl. No. 2.1.1	The FO Communication equipment to be supplied shall be a complete SDH node (add-drop multiplexer) providing all the features e.g. protection and performance monitoring. This will be used for delivering E1 as per ITU-T G.703 and Giga/fast Ethernet services except repeater stations. In case other interface such as Asynchronous Sub-channel data card RS232/ V.24/ V.28), Synchronous data card (V.35/X.21), 2 wire voice channel card or 4 wire (E&M) voice channel card as required, shall be supplied either in the same equipment or as independent PDH equipment.	As per BPS bidder has to provide SDH equipment only. We understand that given interfaces of PDH equipment are not envisaged in current scope of work. Specification is provided for academic purpose only. Bidder has to quote as per BPS only. Please confirm our understanding.	Bidder scope is to provide the successful Telecommunication System under present scope.
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CLARIFICATION RELATED TO CIVIL WORKS:-

50.	General	Contour survey and FGL	Please provide the contour survey drawing	Bidders are requested to visit site to access
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			and proposed FGL of 220/33kv, GIS lassipora substations.	actual requirement.
51.	Price schedule, Part-C: Civil Works, Item no 2 And VOL-II, SEC-XVII Civil works- Cl. 3.0 Page no 9 Of 62 & Cl. 23.2, page 54 of 62	Contour survey	As per scope, contour survey has been considered in price schedule item no 2. However same mode of measurement said “The Contour survey work shall not be measured and paid separately and shall be deemed to be included in the item of site leveling work. We understand that contour survey paid as per price schedule item no-2. Please confirm our understanding is correct.	Item is Contouring and Levelling and not contour survey only.
52.	Price schedule, Part-C: Civil Works, Item no 3 iv	Tower Structure, Support structure for GIS 220kV, Lightning Mast	Please confirm that the mentioned item covered under following structure foundations 1) 220kv towers foundations 2) 33kv tower foundations. 3) Lighting mast foundations 4) 220kv Bus duct supporting structures foundations. 5) 220kv SF6 bushing foundations.	Yes, Towers, LM and other support structure foundation are covered under this item
53.	Price schedule, Part-C: Civil Works, Item no 3 v	Equipment’s structure for L.A, Isolator, BPI in 220kV/33kV AIS	We are understanding that all 220kv,33kv, LT transformer outdoor AIS foundations shall be cover this item. Please confirm	This covers all outdoor 220/33kV equipment foundation only. Auxiliary/LT Transformer is covered at no. 3 (ii). Please note that Quantity of Auxiliary/LT Transformer is 2 (Two).

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54.	VOL-II, SEC-XVII Civil works- Cl. 6.0 Point e Page no 15 Of 62 and Drw no TND/RECTPPL/J& K/DRG/C14	Drain Type.	As referred clause has been mentioned that “Open surface drains shall be constructed with brick masonry or concrete blocks ”. However same provided tender drawing shall be brick drain. We understand that brick drain shall be used for execution as per tender drawing. Please confirm our understanding is correct.	Bidders are requested to refer Tender drawing No. RECTPCL/J&K/DRG/9
55.	Price schedule, Part-C: Civil Works, Item no 13	Design and Construction of Drainage system	As per price schedule drainage system provided in Lum Sum item. Hence, we understand that construction of drainage shall be within boundary wall only and there is no outside drain considered in BOQ. Please confirm.	Bidders may note that, scope is limited to maximum 50M outside of Substation boundary in line with clause no. 6 of Section Civil Works.
56.	VOL-II, SEC-XVII Civil works- Cl. 7.0 Point d Page no 16 Of 62 and	Road	As referred clause, please confirm Strengthening of existing roads is not in bidder scope.	Bidders may note that, being a new substation, question of existing roads strengthening does not arise.
57.	VOL-II, SEC-XVII Civil works- Cl. 9.0, Page no 18 Of 62 and TND/REC/J&K/DR G/GA04	Fire wall	1) As pre-tender layout fire wall shall be bidder scope. However same not reflected in price schedule. Please add the same item in tender BOQ. 2) As referred clause minimum fire resistance shall be 4 hours. Since,	Bidders may note that, Fire wall is coved under item No. 3.0 (i) of BPS. Firewall shall be completely RCC as per TS clause No. 9.1.3

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			we propose the RCC framed with brick paneling type fire wall. Please confirm.	
58.	General	Common burnt oil pit	We understand that common burnt oil pit is not in bidder scope. If it's in bidder scope, please add the same in tender BOQ	Bidders may note that, all transformers are with oil collection pit. Please refer Section Civil works Clause No. 8.0 and is covered under Transformer Foundation.
59.	VOL-II, SEC-XVII Civil works- Cl. 13.5, Page no 28 Of 62	PCC (1:4:8) over RCC slab	As referred clause, it has been mentioned that "First floor details shall comprise of finish as per schedule, 20 mm cement sand mortar and 50 mm thick PCC (1:4:8) over RCC slab . However same 50mm thick PCC (1:4:8) over RCC slab is not reflected in finish schedule. So please confirm that, 50 mm thick PCC (1:4:8) over RCC slab not required and not to be executed.	Bidders may note that, 50 mm thick PCC (1:4:8) over RCC slab is required and need to be executed.
60.	VOL-II, SEC-XVII Civil works- Cl. 13.15, Page no 34 Of 62 , Cl 21.12 page 52 Of 62 And Cl 13.17, page 35 of 62	<ul style="list-style-type: none"> False ceiling 	As per referred clause 13.5 false ceiling shall be 15mm thick 600 X 600mm Mineral fiber board panel false ceiling . However same Clause no 13.17 referred " Gypsum board of 12mm thick " and clause 21.12 said Fifteen millimeter thick densified regular edged ecofriendly light weight calcium silicate false ceiling as per relevant standards shall be provided in the areas specified in Finish Schedule.	Bidders may refer Amendment-5 in this regard.

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			The above clause is contradictory for Type of false ceiling. Please provide the final requirement.	
61.	VOL-II, SEC-XVII Civil works- Cl. 21.1, Page no 34 Of 62	Control Room and GIS Hall	As referred clause mentioned that “The GIS building shall be of pre-engineered steel structure. Control room building, if attached to GIS hall, shall be of pre-engineered steel structure similar to GIS hall and shall be RCC framed structure , if it is not connected” We understand that 220 kv GIS hall attached with control building shall be PEB structural building and 33kv GIS hall shall be RCC framed building. Please confirm our understanding is correct.	Bidders may refer Amendment-5 in this regard.
62.	Price schedule, Part-C: Civil Works, Item no 6 And VOL-II, SEC-XVII Civil works- Cl. 21.10, Page no 34 Of 62 and Cl 21.5.3 Page no 46 Of 62	GIS Building and control room building	As per price schedule, it has been mentioned that “Design, Engineering and Construction of following buildings inclusive of PCC, RCC, reinforcement , internal cable trench (if required) internal and external finish, internal water supply, internal and external sanitation, septic tank and soak pit etc complete in all respects”. However, as per referred clause, “The GIS building shall be of pre-engineered steel	Bidders are requested to refer reply at sl no-61.

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			<p>structure. Control room building, if attached to GIS hall, shall be of pre-engineered steel structure similar to GIS hall".</p> <p>The both are contradictory, please confirm that which type of building shall be considered for 245kv, 33kv GIS hall and Control building.</p>	
63.	VOL-II, SEC-XVII Civil works- Cl. 21.5.2, Page no 46 Of 62	230mm Brick wall	As per referred clause mentioned that "In GIS building and the attached relay room 230mm thick brick wall shall be provided up to roof level of relay room attached to GIS hall. 50mm thick puff sandwiched panels as described above shall be provided above brick wall. Thus, we have considered 3.5 m height of 230mm brick wall for around GIS hall and along with relay panel room. Please confirm.	Bidders may note that, 230mm thick wall around GIS hall with 50mm thick puff sandwiched panels above brick wall in line with specification is in order, however height of wall shall be decided during detailed Engineering of GIS Hall.
64.	VOL-II, SEC-XVII Civil works- Cl. 23.18, Page no 58 Of 62	Rail cum Road	As referred clause said "The rail cum road shall include all items such as excavation, compaction, rolling, watering, WBM, concrete, reinforcement, structural steel and rails with rail fixing details etc. complete as per approved drawing. This work shall not be measured separately as it is covered under respective item of BPS and described in above paras.	Bidders are requested to refer bold lines in para.

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			However, the same Item not reflected in price schedule. Please add the same in price schedule.	
65.	VOL-II, SEC-XVII Civil works- Cl. 19 iii, Page no 41 Of 62 And TND/REC/J&K/DR G/GA04	Firefighting Pump house & Water tank	As referred clause, The contractor shall carry out all the plumbing/erection works required for supply of water to Fire Fighting pump house , Security room beyond the single point as at (i) above. However, we are understanding that firefighting pump house and water take is not in bidders scope, also same not reflected in tender layout. Please confirm.	Yes, Fire Fighting Pump House and Tank is not required and therefore, supply of water to Tank and Pump House is not in the scope.
66.	Price schedule O a	Lattice Structure (Gantry Towers, Beams, LM and Equipment/support structure) including Foundation Bolts	Please provide the grade of steel shall be considered.	Bidders may note that, Steel sections with designated strength 250MPa and/or 350MPa as per IS are to be used.
67.	Price schedule O a	Busduct & Sf6 bushing structures	--in continuous to above, we understand that Busduct supporting structures not covered above mentioned item. Please confirm	Bidders are requested to refer clause no. 4.1.1 (g) of section 1 for Bus duct and SF6 Bushing structure.
68.	VOL-II, SEC-XVII Civil works- Cl. 13.2, Page no 25 Of 62 And Cl 13.4 point 7 ,page 27 of 62	Snow accumulation	As referred clause said “The building shall be constructed as per the design and drawings to be developed by the contractor. Roof with slopes to be provided in case the substation is in snow bound terrain. Please provide the maximum accumulation of snow fall thickness shall be	Bidders may refer Amendment-5 in this regard.

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			considered for design purpose.	
69.	VOL-II, SEC-XVII Civil works- Cl. 13.2, Page25 of 62 And price schedule -item 6 i	Control room building	As referred clause, Control Room Building shall be of size 20 m X 25 m approximately. It will be a double storied RCC Framed structure if constructed separately away from GIS hall. However, as per Price Schedule Control room building shall 500 sqm only. Please confirm these 500 sq. m shall be single story (GF) or double storied building (GF+FF).	Bidders may note that, Control Room cum Administration Building shall be Double Story Building with total area of approximately 500 Sq.M as per price schedule
70.	Car Parking Shed		As Per price schedule 5 nos. parking shed is required however as per specification 10 nos. of car parking shed is required. We understand that price schedule shall prevail. Please clarify the final requirement.	Yes, Car Parking shed for 5 no. vehicle is required as per price schedule
CLARIFICATION RELATED TO TRANSFORMER:-				
71.	Section I (project) page 255/1105 Clause 2.1	1 no. of 220kV bay for 4x53.33MVA, 220/33-33kV, Single Phase Power Transformers (One bank + one spare unit)	Voltage ratio of transformer is different in the specification and price schedule. Kindly confirm the rating/ voltage ratio. Whether it is <u>53.33 MVA 220/33 kV 1-ph transformers</u> or <u>53.3 MVA 220/33-33 kV 1-ph transformers.</u>	It is 53.33MVA, 220/33-33KV 1 Phase Transformer
72.	Price schedule (Schedule 1) Sr no A.1.1 (a)	160MVA (3x53.33 + 1x53.33 Spare), 220/33 KV, Single Phase transformers (Excluding insulating oil)- 4 nos	We understand that 1 no. 160 MVA (3 x 53.33 MVA + 1 x 53.33 MVA) transformers is required. Hence total 4 nos. 53.33 MVA transformer is there.	Yes, 160MVA (3 x 53.33MVA+1x53.33MVA), 220/33-33kV, Single Phase Transformer is required i.e. 4 no. 53.33MVA, 220/33-33kV transformers are required

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			<u>Kindly confirm the no of quantity of transformer required.</u>	
73.	Section-1, Volume-II, page -4 , Clause-1.0	Scope	<p>Confirmed</p> <ol style="list-style-type: none"> Supply of 33kV GIS with Protection Relays to be mounted on panel BCU of 33kV System (One BCU for two bays) is not considered in our scope of supply CRP/BCPU of 33kV GIS and any material required to communicate with SAS (substation automation system) & field interface of station auxiliaries shall not be in scope of supply or service. Scope is limited to Supervision of ETC only. Special tools and tackles & commissioning spares for erection, operation & maintenance of GIS, unloading, shifting of panels at site shall be in scope of ETC contractor. <p>Pl confirm</p>	<p>Bidders may refer the following,</p> <ol style="list-style-type: none"> Noted. Bidders may refer Amendment-5 in this regard. 4 & 5-Bidder is responsible to supply complete system as per specification. <p>Bidders are required to quote as per provision of bidding document.</p>
74.	Section-1, Volume-II, page -4 , Clause-4.1.3	For 33kV system, One BCU for two bays having facility of connecting all required digital I/O & analogue signal for both bays shall also be acceptable. The Contractor shall also supply	BCU of 33kV System (One BCU for two bays) is not considered in our scope of supply. Only Protection relay shall be mouned on GIS Panel.	Bidders are required to quote as per provision of bidding document.

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		separate BCU for monitoring and control of auxiliary system including LT Transformer.		
75.	Section-2 Clause 9.2 page 12	Type tests: However, in case of instrument transformers, the following type tests should have been conducted within 5 (five) years prior to the originally Scheduled date of bid opening. i) Lightning Impulse Test ii) Switching Impulse Test iii) Multiple Chopped Impulse Test (For CT) iv) Chopped Impulse Test (For CVT)	1. Type tests applicable for 33kV GIS as per IEC 62271-200 & Instrument transformers shall not be older than 10 Years from the originally Scheduled date of bid opening i.e. 19.12.2017. Request you to modify validity years of Instrument Transformers from 5 to 10 Years. 2. 33kV CT's are Low Vtg type hence Impulse Type Tests shall not be applicable; 3. 33kV VT's are of Inductive type (IVT) not Capacitive (CVT); Chopped Impulse Test for CVT shall not be forseen.	Bidders may refer Amendment-5 in this regard.
76.	Section-2 Clause 4.6.3.1 page 7	(C) For 33 kV Vacuum Circuit Breaker and Isolator: Design ambient temperature (°C): 50	As the temperature of J&K region shall never go beyond 40degc; Hence request you to confirm design ambient temperature of 33kV GIS to be 40degC. Pl confirm de rating of busbar continuous current rating	Bidder is to meet specification requirement.
77.	Section-2 Clause 12.3.4 page 18	The exterior and interior colour of the paint in case of new substations shall preferably be RAL 7032 for all equipment, marshalling boxes, junction boxes, control cabinets,	33kV GIS paint shade as per manufacturer's standards shall be SN 700. Request you to accept the same.	Bidders may note that, this shall be discussed and decided during detailed Engineering.

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		panels etc.		
78.	Section-3 Clause 2.d) page 2	Each circuit shall have a separate vertical panel with required compartments for circuit breaker, cable termination, main bus-bars and auxiliary control devices.	Noted, however only busbar compartment is common per bus section and is not bay segregated.	Bidder is to meet specification requirement.
79.	Section-3 Clause 2.f) page 2	The Service Class Continuity of Switchgears shall be LSC 2B-PM (as per IEC 622771-200)	We confirm to LSC 2	Bidder is to meet specification requirement.
80.	Section-3 Clause 2.g) page 2	All necessary equipment required for Gas handling at site (if any), shall be arranged by the supplier at their own cost	For 33 kV we have considered SF6 gas required for busbar filling at site and have quoted optional prices for SF6 gas plant (not in scope of supply at present). Please confirm if any change applicable in our scope of supply.	The bidders are required to quote as per BPS. Further, Carrying out gas filling at site is bidder’s responsibility in line with specification requirement.
81.	Section-3 Clause 2.k) page 3	The height of switches, pushbuttons and other hand operated devices shall not exceed 1800 mm and shall not be generally less than 700 mm.	The height of switches, pushbuttons and other hand operated devices shall not exceed 2000 mm and shall not be generally less than 700 mm.	This requirement is kept for ease of operation and maintenance purpose. Bidder’s proposal is acceptable subject to making alternate arrangement i.e permanent platform for height differential by bidder.
82.	Section-3 Clause 2.m) page 3	Suitable base frames made out of steel channels shall be supplied along with necessary anchor bolts and other hardware, for mounting of the switchgear panels	GIS suitable for floor standing. We have not considered any external base frame in our scope of supply. If required base frame detailed dwg shall be submitted.	Noted
83.	Section-3 Clause 2.p) page 3	Thermostatically controlled space heater with common MCB shall be provided for various compartments	Applicable for LV compartment only.	Bidder is to meet specification requirement.

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84.	Section-3 Clause 2.g) page 6	The panel shall have Voltage Presence Indicator (VPI) to warn the operator against earthing of live connections	The warning is via lamps which are part of VPI and shall glow when the respective phase is live(1 lamp per phase)	Noted
85.	Section-3 Clause 3.07a) page 6	All current transformers shall preferably be ring type where as voltage transformers (PT) shall be cast resin insulated type.	PT is of epoxy resin type	Bidders may refer Amendment-5 in this regard.
86.	Section-3 Clause 3.07c) page 6	All instrument transformers shall withstand the power frequency and impulse test voltage specified for the switchgear assembly	Impulse test of 170 kVP not applicable for CTs as CTs are ring type and placed around GIS enclosure.	Noted
87.	Section-3 Clause 3.08.01 page 7	Modbus to IEC 61850 converter shall be provided for integration with SAS	Same is not in our scope of supply	Bidders may note that, Protection relays shall be IEC 61850 compliance.
88.	Section-3 Clause 3.08.08 page 8	All Numerical relays shall have features for electrical measurements including voltage, current, power (active & reactive), frequency, power factor etc	Voltage coil for relays shall be applicable as per technical specs for individual feeder reqt	Bidder is to meet specification requirement.
89.	Section-3 Clause 3.09.01 page 9	Numerical Transformer Protection Relay	Transformer considered as 2 winding trafo. Trafo protection relay shall be selected based on same. Confirm if otherwise	Bidders may note that, Differential, HV and LV REF relays are considered for installation in 220kV CR Panel. However, LV O/C and E/F protection relay with integral REF feature are considered for installation in 33kV GIS Transformer bay Panels.
90.	Section-3 Clause 3.09.04	Battery backup for real time clock in the event of power supply	Same shall be confirmed during detailed engineering	Bidder is to meet specification requirement.

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	page 10	failure shall be provided		
91.	Section-3 Clause 6.03 page 11	Contractor shall include all special tools required for regular operation & routine maintenance of switchgear.	Same shall be in scope of ETC Contractor; Pl note that as Supervision of ETC is considered in our scope of supply.	Bidder is to meet specification requirement.
92.	Section-3 Clause 7.00-5 page 12	ON/OFF indicators for AIS Line Isolator & Line Earth Switch	We can provide ON, OFF indications in our panel which shall be connected to Aux contacts of AIS Line Isolator & Line Earth Switch. The aux contacts and wiring upto GIS panel for above shall be in client's/contractor's scope of supply	Bidder is to meet specification requirement.
93.	Section-3 Clause 7.00-18 page 12	18.LAN/FO Cables Set AS per requirement	Note that as per specs on pg 10 for ethernet switch, Fibre optic port=2 nos i.e only reqd for connection from Switch to SCADA(ring formation).Hence, FO cables are not required within GIS switchboard and same is not in our scope of supply	Bidder is to supply system in totality as per specification.
94.	Section-3 Clause 8.01 page 13	A. Switchgear Panel (with Circuit Breaker installed) h. Test to verify pressure relief operation of the panel (During internal arc test)	Same shall be confirmed during detailed engineering	Bidder is to comply with specification requirement.
95.	Section-3 Clause 8.01 page 13	C. Current Transformer - c. Lighting Impulse voltage withstand test	Impulse test of 170 kVP not applicable for 33kv CTs as CTs are ring type and placed around GIS enclosure.	Noted

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96.	Section-3 Clause 8.01 page 13	E. Switchgear Panel a. IP 4X test	IP4X applicable only for LV compartment. We confirm to maximum degree of protection of IP3XD for Swgr.	Bidder is to meet specification requirement.
97.	Section-3 Clause 9.00a)11 page 16	11 Total break time: Not more than 4 cycles	11 Total break time <85 ms for 1st trip coil instead of <=80 ms(i.e <=4 cycles). Clause confirmed for 2nd shunt trip coil	Bidder is to meet specification requirement.
98.	Section-3 Clause 9.00b)1 page 17	1. Rated primary voltage 33kV	Rated voltage of 33 kV not applicable for CTs as CTs are ring type with LV voltage levels and placed around GIS enclosure and hence free from HV stress levels(enclosure is touch proof in our design)	Noted
99.	Section-3 Clause CT BOQ page 19	CT Rated Burden	VA Burden of each 33kV CT's shall be confirmed during detailed engineering	Bidder is to meet specification requirement.
100.	Section-3 Clause CT BOQ page 19	Knee point voltage (at minimum ratio)- 400V	Reqd of 400 V for lower tapping is stringent and is subject to CT design feasibility	Bidder is to meet specification requirement.
101.	Section-3 Clause CT BOQ page 19	INCOMER / BUS COUPLER FEEDER-3rd core Class PS	We understand that Class PS is only a spare core. Also as per BOQ in pg 12,relay qty for i/c and b/s is 1 only,hence we have not considered any additional differential protection relay for Class PS core.	Bidders may note that, Differential, HV and LV REF relays are considered for installation in 220kV CR Panel. However, LV O/C and E/F protection relay with integral REF feature are considered for installation in 33kV GIS Transformer bay Panels.
102.	Section-3	Current ratio 40-20/1 A	Lower tapping is stringent and is subject to	Bidders may refer Amendment-5 in this

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	Clause CT BOQ page 19		CT design feasibility. Hence request you to accept 100-50/1A for LT Transformer Feeder.	regard.
103.	Section-3 Clause 10 page 21	v) Bus VT FUSE Fail	Fuses are not applicable for VT primary side. Detailed explanation shall be provided during detailed engineering	Bidders may note that, To show Bus VT supply is not available, BUS VT Fuse alarm is required.
104.	Section-4 Clause 1 Page SLD	Bus VT	As per SLD Bus VT is with Disconnecting- cum-earth Switch; Pl confirm whether disconnecter shall be manual or motor operated.	Bidders may note that, Disconnecter shall be electrically as well as manual operated
105.	Section-4 Clause 1 Page SLD	Group operated isolator switches & Group operated grounding switches of 33kV GIS Feeders	In client SLD, they have shown separate isolator and earth switch , which is applicable in HV GIS and not MV GIS. Pl note that in 33kV GIS, we have 3- position Isolator-cum-grounding switch having ON-OFF-EARTH position.	Noted
106.	Section-4 Clause 1 Page SLD	Line Side Isolating -cum-Grounding switch	We understand Line Side Isolating -cum- Grounding switch of Trafo Bay is part of GIS. Pl confirm	Bidder understanding is in order.
107.	Section-4 Clause 1 Page SLD	Location of CT on main bus side of the feeder circuit breaker	1. 33kv GIS is designed for installation of CTs on the load side of the feeder circuit breaker. 2. Due to nature of GIS switchgear, portion of the circuit between main bus to CB is extremely small & most highly secure region of the entire circuit as the GIS	Noted

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			enclosure isolates this portion of the circuit from all environmental conditions. 3. Hence chances of fault in that region is negligible & request you to accept installation of CT on the load side of the feeder circuit breaker.	
108.	Price schedule B.1 g)	245kV, 1600A, 1-phase/ 3 Phase SF6 GIS Bus duct alongwith support structure from GIS building to C/L of SF6 to Air Bushing (* = Considered for Single Phase Duct)	Kindly provide the Autocad Copy of the Layout drawing with exact marked dimensions of the gantries.	Layout drawing with tentative dimensions is already attached with the document. Exact dimensions and location of gantries shall be finalised during detailed Engineering.
109.	TS Section 1 Clause4.1.1.1 245kV Gas Insulated Switchgear	(vi) End Piece module with the test link for Future extension of Bus bar module. The endpiece module may be designed in such a way so that future GIS module may be testedwithout extending voltage to existing bus by removing the test link. In case, 245kV Main Bus bar is offered with 3-ph enclosure, extension piece module shall include Adapter module to convert it to three individual 1-ph bus bar enclosures and same shall be deemed to be included in 245kV Bus Bar module	As per SLD one side End Piece Module with Link is considered. Kindly confirm that the requirement of End Piece Module is only one side.	Bidder understanding is in order that End piece module requirement is on one side.
110.	TS Section 1 Clause4.1.1.(d) 245kV	One (1) number 3-phase, 1600A, SF6 insulated circuit breaker without PIR complete with operating mechanism.	In our Design, the GIS CB shall be single phase encapsulated. Please confirm	Bidders may refer Amendment-5 in this regard.

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	Gas Insulated Switchgear			
111.	TS Section III Clause 4.3 Page No. 5	The switchgear, which shall be of modular design, shall have complete phase isolation. The conductors and the live parts shall be mounted on high graded epoxy resin insulators.	Our design has (245kV GIS) Three phase design	Noted
112.	TS Section III Clause 4.4 Page No. 5	Due to safety requirement for working on this pressurized equipment, whenever the pressure of the adjacent gas compartment is reduced during maintenance, this compartment shall be designed so that it shall remain in service to perform its intended duty.	The switchgear is designed to perform its intended and switching duty at rated Gas pressure. However, the same shall perform only the intended duty at reduced pressure and not switching duty. Please accept the same.	Bidder has to meet specification requirement.
113.	TS Section III Clause 4.19 Page No. 8	The GIS shall be designed, so as to take care of the VFT over voltages generated as a result of pre-strikes and re-strikes during isolator operation. Maximum VFT over voltages peak shall not be higher than rated lightning impulse withstand voltage (LIWV) of the equipment. Necessary measures shall be under taken by GIS manufacture to restrict maximum VFT over voltages lower than the LIWV. Manufacturer shall submit the	The GIS has already been Type Tested for certain VFT values which are lower than LIWV. We understand that no additional VFT study needs to be performed for the system. We request PGCIL to kindly confirm the same.	Noted. However, Manufacturer shall submit the study report of VFTO generated for GIS installation.

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		study report of VFTO generated for GIS installation.		
114.	TS Section III Clause 4.25 Page No. 8	The ladders and walkways shall be provided wherever necessary for access to the equipment.	We envisage provision of Mobile Ladders for access to operating mechanisms and no walkways are necessary for proposed Layout. Please accept.	Bidder is to meet specification requirement.
115.	TS Section III Clause 4.29 Page No. 9	Any other alarm necessary to indicate deterioration of the gas insulating system.	The inclusion of this alarm is excluded for the offered GIS.	Bidder is to meet specification requirement.
116.	TS Section III Clause 4.32 Page No. 10	Temperature rise of current carrying parts shall be limited to the values stipulated in IEC-62271-1, under rated current and the climatic conditions at site. The temperature rise for all enclosures shall not exceed 20 degree C above the ambient temperature of 50 degree C. These conditions shall be taken into account by the supplier in the design of the equipment.	As per IEC IEC-62271-1, The temperature rise for accessible enclosure shall not exceed 20 degree C above the ambient temperature of 50 degree C. In the case of enclosures, which are accessible but need not be touched during normal operation, the temperature rise limit may be permitted upto 30 degree C above the ambient of 50 degree C. Please accept.	Bidder is to meet specification requirement.
117.	TS Section III Clause 4.36.3 Page No. 11	The enclosure of the GIS may be grounded at several points so that there shall be grounded cage around all the live parts. A minimum of two nos. of grounding connections should be provided for each of circuit breaker, cable	The GIS design is such, the proper bonding is ensured by direct metal to metal flange connections and 2 nos. earthing provisions given for grounding.	Bidder is to meet specification requirement.

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		terminals, surge arrestors, earth switches and at each end of the bus bars. The grounding continuity between each enclosure shall be effectively interconnected externally with Copper /Aluminum bonds of suitable size to bridge the flanges.		
118.	TS Section III Clause 4.37 Page No. 13	UHF sensors for PD detection: Contractor shall provide adequate number of UHF sensors in the offered GIS for detection of Partial discharge (of 5 pC and above) as per IEC 60270 through Partial Discharge (PD) monitoring system and the number and location of these sensors shall be subject to approval of the employer. Further UHF sensors shall necessarily be provided in close proximity to VT compartments. However adequacy of number of sensors and their location shall be verified at site by the contractor as per recommendations of CIGRE task force TF 15/33.03.05 (Task force on Partial discharge detection system for GIS: Sensitivity verification for the UHF method and the acoustic method). In case	Number of UHF sensors & the location of UHF sensors shall be as per manufacturer's recommendations. Please note that the locations of sensors shall be decided during detailed engineering itself to achieve the desired sensitivity & the same will be reflected on the drawings which will be submitted for approval. No change on the same recommended at site. Please accept.	Bidder is to meet specification requirement.

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		during site testing additional UHF sensors are required, the same shall also be supplied& installed to complete the technical requirement.		
119.	TS Section III Clause 4.38 2) Page No. 13	GIS bus ducts of each circuit shall be arranged in preferably horizontal formation and the clearance (outer to outer) between nearest bus ducts of two adjacent circuits shall be minimum one (1) meter.	The space/area utilisation for such a configuration is very high and request customer to accept the standard spacings between circuits considering the fact that the Bus-ducts are passive and requires almost no maintenance. Request RECPTCL to accept the same.	Bidder is to meet specification requirement.
120.	TS Section III Clause 4.38 4) Page No. 13	The minimum outer to outer horizontal clearance between each GIS bus duct shall be 0.75 meter for 765kV & 400 kV voltage level and 0.5 meter for 220 kV & 132kV voltage level.	Phase to Phase distance for a switchgear is fixed & GIB shall be extended to outdoor with the same phase to phase distance for an optimum layout. Please accept.	Bidder is to meet specification requirement.
121.	TS Section III Clause 4.38 6) Page No. 13	The horizontal clearance between GIB and GIS building /any other building wall shall be minimum three (3) meters.	Only for GIB Support structure approx. 1 Mtrs distance will be needed from wall to GIB, however minimum required space between building to GIB shall be decided during detailed stucture designing for an optimum layout and and also to accommodate the future feeder GIB. Please accept.	Bidder is to meet specification requirement.
122.	TS Section III Clause 5.6.7	Circuit Breaker shall be supplied with auxiliary switch having additional 8	Auxiliary switches are of standard design/size suitably designed for the	Bidder is to meet specification requirement

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	Page No. 20	NO(normally open) and 8 NC (normally closed) contacts for future use over and above those required for switchgear interlocking and other control and protection function. These spare NO and NC contacts shall be wired upto the local control cubicle.	available space. Hence the required additional 8 NO (Normally open) and 8 NC (normally closed) contacts shall be provided to customer through contact multiplication relays at LCC.	
123.	TS Section III Clause 5.7.2 c) Page No. 21	The breaker shall normally be operated by remote electrical control. Electrical tripping shall be performed by shunt trip coils. However, provisions shall be made for local electrical control. For this purpose a local/remote selector switch and close and trip control switch/push buttons shall be provided in the breaker control cabinet.	As per our standard practice the Local/Remote switches will be provided in the Local Control Cubicle (LCC).	Noted
124.	TS Section III Clause 5.10.2 Routine Test Page No. 24	ii. Functional tests are to be carried out on circuit breaker along with Control Switching device (CSD).	Kindly confirm the requirement of CSD and Pre insertion resistors for 220kV GIS.	Bidders may note that, CSD and Pre insertion resistor are not required for 220kV GIS and therefore, Functional test on circuit breaker along with Control switching device is not applicable.
125.	TS Section III Clause 6.2.9 Page No. 25	Each disconnecter shall be supplied with auxiliary switch having additional 4 NO (Normally Open) and 4 NC (Normally Closed) contacts for	Auxiliary switches are of standard design/size suitably designed for the available space. Hence the required additional 4 NO (Normally open) and 4 NC	Bidder is to meet specification requirement

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		future use over and above those required for switchgear interlocking and automation purposes. These spare NO and NC contacts shall be wired up to the local control cabinet.	(normally closed) contacts shall be provided to customer through contact multiplication relays at LCC. Please accept	
126.	TS Section III Clause 6.2.12 Page No. 25	The disconnectors and safety grounding switches shall have a mechanical and electrical inter-locks to prevent closing of the grounding switches when isolator switches are in the closed position and to prevent closing of the disconnectors when the grounding switch is in the closed position. Integrally mounted lock when provided shall be equipped with a unique key for such three phase group. Master key is not permitted.	The disconnectors and the safety grounding switches are separate modules in GIS design and shall have only electrical inter-locks between them. However the required padlocking facility shall be provided for the manual interlocking for additional protection.	The clause No. 6.2.12 (Section 3) in the specification is as follows:- The disconnectors and safety grounding switches shall have an electrical inter-locks. To prevent closing of the grounding switches when isolator switches are in the closed position and to prevent closing of the disconnectors when the grounding switch is in the closed position, provision for mechanical padlock shall be made. Integrally mounted lock when provided shall be equipped with a unique key for such three phase group. Master key is not permitted. Bidder is to meet above requirement of specification.
127.	TS Section III Clause 7.2 Page No. 27	Each safety grounding switch shall be electrically interlocked with its associated disconnectors and circuit breaker such that it can only be closed if both the circuit breaker and disconnectors are in open position.	The disconnectors and the safety grounding switches are separate modules in GIS design and shall have only electrical inter-locks between them. However the required padlocking facility shall be provided for the manual interlocking for additional	Noted

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		Safety grounding switch shall also be mechanically key interlocked with its associated disconnectors.	protection.	
128.	TS Section III Clause 7.6 Page No. 28	Each ground switch shall be fitted with auxiliary switches having 4 NO (Normally Open) and 4 NC (Normally Closed) contacts for use by others over and above those required for local interlocking and position indication purposes.	Auxiliary switches are of standard design/size suitably designed for the available space. Hence the required additional 4 NO (Normally open) and 4 NC (normally closed) contacts shall be provided to customer through contact multiplication relays at LCC.	Bidder is to meet specification requirement.
129.	TS Section III Clause 8.9 Page No. 30	Each high speed ground switch shall be fitted with auxiliary switches having 4 NO (Normally Open) and 4 NC (Normally Closed) contacts for use by others, over and above these required for local interlocking and position indication. All contacts shall be wired to terminal blocks in the Local Control Cabinet. Provision shall be made for padlocking the ground switches in their open or closed position.	Auxiliary switches are of standard design/size suitably designed for the available space. Hence the required additional 4 NO (Normally open) and 4 NC (normally closed) contacts shall be provided to customer through contact multiplication relays at LCC.	Bidder is to meet specification requirement.
130.	TS Section III Clause 9.2.5 d) Page No. 33	Voltage transformers secondary shall be protected by Miniature Circuit breakers (MCBs) with monitoring contacts for all the windings. The secondary terminals of the VT’s shall be terminated to	Voltage transformers secondary shall be protected by Miniature Circuit breakers (MCBs)	Bidder is to meet specification requirement.

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		preferably stud type non-disconnecting terminal blocks in the secondary boxes via the fuse.		
131.	TS Section III Clause 14.1.3 Page No. 33 GIS Specification Rev 04	Closing of the circuit-breaker from the local control unit shall only be available when the breaker is isolated for maintenance purposes. Circuit-breaker control position selector, operating control switch and electrical emergency trip push button shall be installed in the Local Control Cubicle. Circuit-breaker control from this position will be used under maintenance and emergency conditions only. The emergency trip push buttons shall be properly shrouded.	The Emergency Push button shall be provided for 132kV GIS CB, however the same is not necessary for 245kV GIS since the CB operating mechanism is very much in the accessible location.	Bidder is to meet specification requirement.
132.	TS Section III Clause 4.40.2 Page No. 14	As the GIS is likely to be extended in future, the contractor shall make available during detailed engineering stage, the complete design detail of interface module such as cross section, enclosure material, enclosure dimensions (inner & outer), Flange diameter (inner & outer), conductor connection arrangement, bolt spacing & dimension, rated gas pressure etc. Further GIS	No material supply is considered in our scope for design of adopter for future extension of GIS. The Data shall be provided in line with IEEE C37	Bidder is to meet specification Requirement as detailed in Clause No.4.1.1. a (vi), Section -I Project, Vol-II.

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		manufacturer supplying GIS under present scope shall furnish all the required details in addition to mentioned above necessary for design and successful implementation of an interface module during later stage while extending GIS by any other GIS manufacturer, without any help of GIS manufacturer who has supplied the GIS equipment in present scope.		
133.	TS Section III Clause 4.40.4 Page No. 14	. Further the contractor who is extending the existing GIS installation shall optimally utilize the space inside the GIS hall (including the extension portion) for accommodating the interface module being supplied under the contract and the space (along the length of the hall) inside the GIS hall for interface module shall preferably be limited to 1 meter for 220/132kV	We shall limit the length of the interface modules as minimum as possible, however the exact length shall be confirmed only during detailed engineering. Also, understand that this is greenfield project and do not required any extension of existing GIS	This clause is not applicable being a new substation.
134.	TS Section III Clause 4.41 Page No. 15	SF6 gas shall be tested for purity, dew point, air, hydrolysable fluorides and water contents as per IEC:376, 376A & 376B and test certificates shall be furnished to the owner indicating all test results as	SF6 gas shall be tested for purity, dew point, air, hydrolysable fluorides and water contents as per IEC:376, 376A & 376B and test certificates shall be furnished to the owner indicating all test results as per IEC standards. Flash point	Bidder is to meet specification requirement.

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		per IEC standards for each lot of SF6 gas. Further site tests for moisture, air content, flash point and dielectric strength to be done during commissioning of GIS. Gas bottles should be tested for leakage during receipt at site.	and dielectric strength tests are not be possible at site due to practical restrictions and for all other tests, test reports shall be submitted. PLease accept the same.	
135.	TS Section III Clause 5.4 Page No. 18	Interrupting the steady and transient magnetizing current shall be as follows:	Interrupting the steady and transient magnetizing current as stipulated in IEC.	Bidder is to meet specification requirement.
136.	TS Section III Clause 5.10.2 Page No. 24	iii. DCRM (Dynamic Contact Resistance Measurement) to be carried out for all CBs during routine test. Functional tests are to be carried out on circuit breaker along with Control Switching device (CSD).	With our decades of experience on our interrupter design there is no essential of DCRM test to be carried out, hence the same shall not be part of our routine test.	Bidder is to meet specification requirement.
137.	TS Section III Clause 6.2.12 Page No. 25	The disconnectors and safety grounding switches shall have a mechanical and electrical inter-locks to prevent closing of the grounding switches when isolator switches are in the closed position and to prevent closing of the disconnectors when the grounding switch is in the closed position. Integrally mounted lock when provided shall be equipped	Only electrical inter-locks possible between DS & ES. We request PGCIL to accept the same.	The clause No. 6.2.12 (Section 3) in the specification is as follows:- The disconnectors and safety grounding switches shall have an electrical inter-locks. To prevent closing of the grounding switches when isolator switches are in the closed position and to prevent closing of the disconnectors when the grounding switch is in the closed position, provision for mechanical padlock shall be made.

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		with a unique key for such three phase group. Master key is not permitted.		Integrally mounted lock when provided shall be equipped with a unique key for such three phase group. Master key is not permitted. Bidder is to meet above requirement of specification.
138.	TS Section III Clause 19.5 Page No. 45	DESIGN REVIEW The manufacturer will be required to demonstrate the use of adequate safety margins for thermal, mechanical, dielectric, insulation coordination and vibration etc. design to take into the account the uncertainties of his design and manufacturing processes.	Intellectual property of Manufacturer & no such information shall be demonstrated. However adequate care on design considered in our design.	Bidder is to meet specification requirement.
139.	TS Section III Clause 19.6 Page No. 45	The scope of such a design review shall at least include the following: 1. Dielectric Stress of Solid Insulation like Gas Barrier, support insulator etc. 2. Dielectric stress of SF6 Gas Volume. 3. Mechanical strength of enclosure, expansion joints etc. 4. Criteria for providing expansion joint. 5. Sealing system	Intellectual property of Manufacturer & no such information shall be reviewed. However adequate care on design considered in our design.	Bidder is to meet specification requirement.

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		6. Insulation coordination 7. Thermal stress and resulting increase in gas pressure during short circuit condition. 8. Earthing of enclosure w.r.t circulating current. 9. Seismic design, as per IEC 62271-207 10. Circuit Breaker . 11. Isolator and Earth switch. 12. Voltage transformer. 13. Current Transformer. 14. Surge Arrester. 15. Bushing. 16. Ducting. 17. Corrosion protection . 18. Electrical and physical Interfaces with substation . 19. Testing capabilities. 20. Inspection and test plan. 21. Transport and storage. 22. Maintainability. 23. Site Test.		
140.	TS Section III Clause 6.2.12 Page No. 22	Further, the manufacturer shall furnish the following information a) Details regarding the loosely distributed metallic particles within the GIS encapsulation and	Intellectual property of Manufacturer & no such information shall be reviewed.	Bidder is to meet specification requirement.

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		calculations of critical field strength for specific particles of defined mass and geometry. b) Study report of VFTO generated for GIS installation. c) The methodology and all the equipment for electrical partial discharge (PD) detection, including that mentioned in the specification else-where. d) The calculations and documents in support of the average intensity of electromagnetic field on the surface of the enclosure above during detailed engineering. e) The detailed criteria/ design regarding location of pressure relief devices/rupture diaphragms		
141.	TS Section III Clause 19.7 Page 46	f) Calculations to show that there is no Ferro resonance due to capacitance of GIS for the voltage transformers g) Design calculation for simulated parameters for Seismic level as applicable h) Insulation Coordination studies including studies to recommend for additional surge	f), g), j), k) Intellectual property of Manufacturer & no such information shall be reviewed. h), We request you to exclude from the scope.	Bidder is to meet specification requirement.

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		<p>arrestor</p> <p>i) Calculation in support of touch & step voltages in all enclosures and earthing of complete GIS installation.</p> <p>j) Measures to mitigate transient enclosure voltage by high frequency currents.</p> <p>k) Calculation for providing bus duct supports.</p>		
142.	TS Section III Clause 22 Page 48	All transport packages containing critical units viz Circuit breakers and Voltage transformers shall be provided with sufficient number of electronic impact recorders (on returnable basis) during transportation to measure the magnitude and duration of the impact in all three directions. The acceptance criteria and limits of impact in all three directions which can be withstood by the equipment during transportation and handling shall be submitted by the contractor during detailed engineering. The recording shall commence in the factory and must continue till the units reach site. The data of	Shock indicators shall be provided only for VTs being a sensitive equipments. No electronic impact recorders are necessary for Circuit Breaker. Please accept the same.	Bidder is to meet specification requirement.

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		electronic impact recorders shall be downloaded at site and a soft copy of it shall be handed over to Engineer - in -charge. Further, contractor shall communicate the interpretation of the data within three weeks.		
143.	TS Section III Clause 18.2 Page 44	The adequacy of number of UHF sensors and their location shall be verified as per recommendations of CIGRE task force TF 15/33.03.05 (Task force on Partial discharge detection system for GIS: Sensitivity verification for the UHF method and the acoustic method). In case during site testing additional UHF sensors are required, the same shall also be supplied and installed to complete the technical requirement.	Number of UHF sensors & the location of UHF sensors shall be as per manufactureres' recommendations. Please note that the locations of sensors shall be decided during detailed engineering itself to achieve the desired sensitivety & the same will be reflected on the drawings which will be submitted for approval. No change on the same recommended at site. please accept.	Bidder is to meet specification requirement.
144.	TS Section III Clause 5.9 b) Page 23	b) Data on capabilities of circuit breakers in terms of time and number of operations at duties ranging from 100 fault currents to load currents of the lowest possible value without requiring any maintenance or checks.	Kindly provide the complete details of the data required	Requirement is as specified in bidding document.

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145.	33kV GIS Clause 8.01 Page 12	Type tests: However, in case of instrument transformers, the following type tests should have been conducted within 5 (five) years prior to the originally Scheduled date of bid opening. i) Lightning Impulse Test ii) Switching Impulse Test iii) Multiple Chopped Impulse Test (For CT) iv) Chopped Impulse Test (For CVT)	1. Type tests applicable for 33kV GIS as per IEC 62271-200 & Instrument transformers shall not be older than 10 Years from the originally Scheduled date of bid opening i.e. 19.12.2017. Request you to modify validity years of Instrument Transformers from 5 to 10 Years. 2. 33kV CT's are Low Vtg type hence Impulse Type Tests shall not be applicable; 3. 33kV VT's are of Inductive type (IVT) not Capacitive (CVT); Chopped Impulse Test for CVT shall not be forseen.	Bidders may refer Amendment-5 in this regard.
146.	33kV GIS Clause4.6.3.1 Page 7	(C) For 33 kV Vacuum Circuit Breaker and Isolator: Design ambient temperature (°C): 50	As the temperature of J&K region shall never go beyond 40degc; Hence request you to confirm design ambient temperature of 33kV GIS to be 40degC. Pl confirm de rating of busbar continuous current rating	Bidder is to follow tender specification.
147.	33kV GIS Clause 12.3.4 Page 18	The exterior and interior colour of the paint in case of new substations shall preferably be RAL 7032 for all equipment, marshalling boxes, junction boxes, control cabinets, panels etc.	33kV GIS paint shade as per manufacturer's standards shall be SN 700. Request you to accept the same.	This shall be finalised during detailed Engineering

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148.	33kV GIS Clause 2. D) Page 2	Each circuit shall have a separate vertical panel with required compartments for circuit breaker, cable termination, main bus-bars and auxiliary control devices.	Noted, however only busbar compartment is common per bus section and is not bay segregated.	Noted
149.	33kV GIS Clause 2. F) Page 2	The Service Class Continuity of Switchgears shall be LSC 2B-PM (as per IEC 622771-200)	We confirm to LSC 2	Bidder is to meet specification requirement.
150.	33kV GIS Clause 2.g) Page 2	All necessary equipment required for Gas handling at site (if any), shall be arranged by the supplier at their own cost	For 33 kV we have considered SF6 gas required for busbar filling at site Please confirm if any change applicable in our scope of supply.	Carrying out gas filling with bidders Gas filling and evacuation plant is bidder’s responsibility.
151.	33kV GIS Clause 2.k) Page 3	The height of switches, pushbuttons and other hand operated devices shall not exceed 1800 mm and shall not be generally less than 700 mm.	The height of switches, pushbuttons and other hand operated devices shall not exceed 2000 mm and shall not be generally less than 700 mm.	This requirement is kept for ease of operation and maintenance purpose. Bidder proposal is acceptable subject to making alternate arrangement i.e permanent platform for height differential by bidder.
152.	33kV GIS Clause 2.m) Page 3	Suitable base frames made out of steel channels shall be supplied along with necessary anchor bolts and other hardware, for mounting of the switchgear panels	Our GIS suitable for floor standing so any external base frame is not considered and same have been not considered in our scope of supply. Please confirm	Bidder is to meet specification requirement.
153.	33kV GIS Clause 2.p) Page 3	Thermostatically controlled space heater with common MCB shall be provided for various compartments	Applicable for LV compartment only.	Bidder is to meet specification requirement.

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154.	33kV GIS Clause 2.g) Page 6	The panel shall have Voltage Presence Indicator (VPI) to warn the operator against earthing of live connections	The warning is via lamps which are part of VPI and shall glow when the respective phase is live(1 lamp per phase) pl confirm	Noted
155.	33kV GIS Clause 3.07 a) Page 6	All current transformers shall preferably be ring type where as voltage transformers (PT) shall be cast resin insulated type.	PT is of epoxy resin type. Please confirm	Bidders may refer Amendment-5 in this regard.
156.	33kV GIS Clause 3.07 c) Page 6	All instrument transformers shall withstand the power frequency and impulse test voltage specified for the switchgear assembly	Impulse test of 170 kVP not applicable for CTs as CTs are ring type and placed around GIS enclosure. Please confirm	Noted
157.	33kV GIS Clause 3.08.08 Page 8	All Numerical relays shall have features for electrical measurements including voltage, current, power (active & reactive), frequency, power factor etc	Voltage coil for relays shall be applicable as per technical specs for individual feeder reqt	Noted
158.	33kV GIS Clause 3.09.01 Page 9	Numerical Transformer Protection Relay	Transformer considered as 2 winding trafo.Trafo protection relay shall be selected based on same. Please confirm	Bidders may note that, Differential, HV and LV REF relays are considered for installation in 220kV CR Panel. However, LV O/C and E/F protection relay with integral REF feature are considered for installation in 33kV GIS Transformer bay Panels.
159.	33kV GIS Clause 3.09.04 Page 10	Battery backup for real time clock in the event of power supply failure shall be provided	Same shall be confirmed during detailed engineering	Bidder is to meet specification requirement.
160.	33kV GIS	ON/OFF indicators for AIS Line	We can provide ON,OFF indications in our	Bidder is to meet specification requirement.

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	Clause 7.00-5 Page 12	Isolator & Line Earth Switch	panel which shall be connected to Aux contacts of AIS Line Isolator & Line Earth Switch.	
161.	33kV GIS Clause 7.00-18 Page 12	18.LAN/FO Cables Set AS per requirement	Note that as per specs on pg 10 for ethernet switch,Fibre optic port=2 nos i.e only reqd for connection from Switch to SCADA(ring formation).Hence,FO cables are not required within GIS switchboard and same is not in our scope of supply	Bidder is to supply system in totality as per specification.
162.	33kV GIS Clause 8.01 Page 13	A. Switchgear Panel (with Circuit Breaker installed) h. Test to verify pressure relief operation of the panel (During internal arc test)	Same shall be confirmed during detailed engineering	Bidder is to comply with specification requirement.
163.	33kV GIS Clause 8.01 Page 13	C. Current Transformer - c. Lighting Impulse voltage withstand test	Impulse test of 170 kVP not applicable for 33kv CTs as CTs are ring type and placed around GIS enclosure.	Noted
164.	33kV GIS Clause 8.01 Page 13	E. Switchgear Panel a. IP 4X test	IP4X applicable only for LV compartment.We confirm to maximum degree of protection of IP3XD for Swgr.	Bidder is to meet specification requirement.
165.	33kV GIS Clause 9.00 a)11 Page 16	11 Total break time: Not more than 4 cycles	11 Total break time <85 ms for 1st trip coil instead of <=80 ms(i.e <=4 cycles). Clause confirmed for 2nd shunt trip coil	Bidder is to meet specification requirement.
166.	33kV GIS Clause 9.00 b)1	1. Rated primary voltage 33kV	Rated voltage of 33 kV not applicable for CTs as CTs are ring type with LV voltage	Noted

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	Page 17		levels and placed around GIS enclosure and hence free from HV stress levels(enclosure is touch proof in our design)	
167.	33kV GIS Clause CT BOQ Page 19	CT Rated Burden	VA Burden of each 33kV CT's shall be confirmed during detailed engineering	Bidder is to meet specification requirement.
168.	33kV GIS CT BOQ Page 19	Knee point voltage (at minimum ratio)- 400V	Reqd of 400 V for lower tapping is stringent and is subject to CT design feasibility	Bidder is to meet specification requirement.
169.	33kV GIS CT BOQ Page 19	INCOMER / BUS COUPLER FEEDER-3rd core Class PS	We understand that Class PS is only a spare core. Also as per BOQ in pg 12,relay qty for i/c and b/s is 1 only,hence we have not considered any additional differential protection relay for Class PS core.	Bidders may note that, Differential, HV and LV REF relays are considered for installation in 220kV CR Panel. However, LV O/C and E/F protection relay with integral REF feature are considered for installation in 33kV GIS Transformer bay Panels.
170.	33kV GIS CT BOQ Page 19	Current ratio 40-20/1 A	Lower tapping is stringent and is subject to CT design feasibility. Hence request you to accept 100-50/1A for LT Transformer Feeder.	Bidders may refer Amendment-5 in this regard.
171.	33kV GIS Clause 10 Page 21	v) Bus VT FUSE Fail	Fuses are not applicable for VT primary side. Detailed explanation shall be provided during detailed engineering	To indicate Bus VT output is not available, BUS VT Fuse or alternative arrangement alarm is required.
172.	33kV GIS Clause 1 Page SLD	Bus VT	As per SLD Bus VT is with Disconnecting-cum-earth Switch; Pl confirm whether disconnectors shall be	Bidders may note that, Disconnectors shall be electrically as well as manual operated

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			manual or motor operated.	
173.	33kV GIS Clause 1 Page SLD	Group operated isolator switches & Group operated grounding switches of 33kV GIS Feeders	In client SLD, they have shown separate isolator and earth switch , which is applicable in HV GIS and not MV GIS. Pl note that in 33kV GIS, we have 3- position Isolator-cum-grounding switch having ON-OFF-EARTH position.	Noted
174.	33kV GIS Clause 1 Page SLD	Line Side Isolating -cum-Grounding switch	We understand Line Side Isolating -cum- Grounding switch of Trafo Bay is part of GIS. Pl confirm	Bidder understanding is in order.
175.	33kV GIS Clause 1 Page SLD	Location of CT on main bus side of the feeder circuit breaker	1. 33kv GIS is designed for installation of CTs on the load side of the feeder circuit breaker. 2. Due to nature of GIS switchgear, portion of the circuit between main bus to CB is extremely small & most highly secure region of the entire circuit as the GIS enclosure isolates this portion of the circuit from all environmental conditions. 3. Hence chances of fault in that region is negligible & request you to accept installation of CT on the load side of the feeder circuit breaker.	Noted