



Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)

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CORRIGENDUM - 10 TO NIT NO-63589

Subject: Corrigendum-10 to Tender enquiry for Pre-bid Tie up for Supply & Services of 400/220 kV GIS for POWERGRID Navsari Project.

Project : POWERGRID Navsari PROJECT
Equipment / Item : SUPPLY & SERVICES OF 400/220 kV GIS.
Enquiry No/Date : NIT 63589_61G2200250 dated 05.03.2022
BHEL NIT NO : 63589
Original Tender due date : 09.03.2022

This Corrigendum is being issued by BHEL TBG against above mentioned NIT/ enquiry to furnish clarifications. Please note that due date for offer submission, up to 11:00 AM on 06.04.2022 and bids shall be opened 04:00 PM onwards on 06.04.2022, shall remain unchanged.

All other terms and conditions for this tender enquiry shall remain unchanged.

Bidder to ensure submission of offer on or before due.

Note: Tender ID in CPP Portal is **2022_BHEL_9147_2**.

Thanking you

Vineet Gupta
BHEL TBG, NOIDA

Technical Clarification No-1 for GIS Package

Reference: GIS Package Navsari, Kala & Magarwada GIS

S. No.	Volume/Section/ Clause No.	Description	General Query	BHEL / Powergrid Replay
01 to 18	deleted			
B	GIS Queries			
19	Cl. No. 2.3 of Section-GIS (Rev-05A) of TS	The equipment offered shall be protected against all types of voltage surges and any equipment necessary to satisfy this requirement shall deemed to be included.	We understand that surge arrestors are required to cater the requirement and are of AIS type.	Please note, AIS type LA shall be provided by BHEL. In addition to the same, GIS type LA if required, to meet the requirement stipulated in the referred clause and clause no. 11.2 of Section-GIS (Rev-05A) of TS and the cost of the same is to be built up by bidder under GIS equipment.
20	Cl. No. 5.8 of Section-GIS (Rev-05A) of TS	The material and thickness of the enclosures shall be such as to withstand an internal flash over without burns through for a period of 300 ms at rated short time withstand current. The material shall be such that it has no effect of environment as well as from the by-products of SF6 breakdown under arcing condition. This shall be validated with Type Test.	The Value shall be in line with the requirement of IEC 62271-203. Request a concurrence on the same.	Bidder to comply the requirement of Technical specification of bidding documents.
21	Cl. No. 5.9 of Section-GIS (Rev-05A) of TS	Inspection windows (View Ports) shall be provided for Disconnect Switch and both type of earth switches i.e. Maintenance and fast operating.	Inspection windows shall be provided for Disconnect enclosures. Provision of Observation windows for Earth switches is not envisaged as such.	Bidder to comply the requirement of Technical specification of bidding documents.
22	Cl. No. 5.21 of Section-GIS (Rev-05A) of TS	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 study report of VFTO generated for GIS installation.	For an 220 kV GIS system, we do not envisage VFTO studies. Hence, the same shall be excluded from scope.	In line with cl. No. 5.21 of Section-GIS (Rev-05A) of Technical Specification, GIS manufacturer shall submit the study report of VFTO generated for GIS installation for 400 kV and above. Bidder to go through the complete referred clause for more clarity.

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23	Cl. No. 5.26 of Section-GIS (Rev-05A) of TS	The switchgear shall have provision for connection with ground mat risers through copper connections. This provision shall consist of grounding pads to be connected to the ground mat riser in the vicinity of the equipment.	Earthing details shall be provided during detailed engineering stage.	Noted. Further, bidder to comply the requirement of Technical specification of bidding documents.
24	Cl. No. 5.28 of Section-GIS (Rev-05A) of TS	In addition to above suitable portable scissor lift shall be provided for access of distant portion of GIS installation.	We do not envisage this requirement. Walkways if required and portable ladder shall be provided.	Bidder to comply the requirement of Technical specification of bidding documents.
25	Cl. No. 5.32 of Section-GIS (Rev-05A) of TS	ii) Any other alarm necessary to indicate deterioration of the gas insulating system.	Not Applicable for the offered GIS	Confirmed.
26	Cl. No. 5.39 of Section-GIS (Rev-05A) of TS	Grounding	Earthing details shall be provided during detailed engineering stage.	Noted. Further, bidder to comply the requirement of Technical specification of bidding documents.
27	Cl. No. 5.42 of Section-GIS (Rev-05A) of TS: Gas Insulated Bus (GIB) layout :	The horizontal clearance between GIB and GIS building /any other building wall shall be preferably three (3) meters.	The space/area utilization for such a configuration is very high and request customer to accept the standard spacing's between circuits considering the fact that the Bus-ducts are passive and requires almost no maintenance. Request PGCIL to accept the same.	Bidder to comply the requirement of Technical specification of bidding documents.
28	Cl. No. 5.39.3 of Section-GIS (Rev-05A) of TS	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 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.	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 to comply the requirement of Technical specification of bidding documents.
29	Cl. No. 5.45 of Section-GIS (Rev-05A) of TS	xviii. Study report of VFTO generated for GIS installation for 400 kV and above.	For an 220 kV GIS system, we do not envisage VFTO studies. Hence, the same shall be excluded from scope.	The requirement of bidding document is ampler clear. Bidder to quote accordingly.
30	Cl. No. 6.6.7 of Section-GIS (Rev-05A) of TS	Provisions shall be made for attaching an operational analyzer to record travel, speed and making measurement of operating timings etc. after installation at site. The contractor shall supply three set of transducer for each substation covered under the scope.	The transducers shall be supplied by the Operational analyzer vendor for recording travel, speed and making measurement of operating timing. Since the supply of operational analyzer is not in the present scope of tender, the transducers for the same shall not be in scope. Please confirm.	The contractor shall supply 03 set of transducer for each substation under the present contract and the cost of the same is to be built up by bidder under GIS equipment.
31	Cl. No. 6.6.8 of	Circuit Breaker shall be supplied with	Auxiliary switches are of standard design/size suitably designed for the	Noted. However, detail shall be finalized during detailed

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	Section-GIS (Rev-05A) of TS	auxiliary switch having additional 8 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.	engineering meeting the requirements of Technical Specifications.
32	Cl. No. 6.7.2 of Section-GIS (Rev-05A) of TS	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. However, detail shall be finalized during detailed engineering meeting the requirements of Technical Specifications.
33	Cl. No. 7.2.5 of Section-GIS (Rev-05A) of TS	For motor-operated disconnect switches, the control should be electrically and/or mechanically uncoupled from the drive shaft when the switch is operated manually to prevent coincident power operation of the switch and the drive mechanism(s).	Only electrical inter-locks possible between DS & ES. We do not envisage providing any mechanical interlocks. Request customer to kindly accept the same.	Noted. However, the detail requirement of applicability shall be decided during detailed engineering considering offered GIS design and meeting the requirements of Technical Specifications.
34	Cl. No. 7.2.10 of Section-GIS (Rev-05A) of TS	Each disconnecter shall be supplied with auxiliary switch having additional 8 NO (Normally Open) and 8 NC (Normally Closed) contacts for 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.	Auxiliary switches are of standard design/size suitably designed for the 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.	Noted. However, detail shall be finalized during detailed engineering meeting the requirements of Technical Specifications.
35	Cl. No. 7.2.13 of Section-GIS (Rev-05A) of TS	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.	Noted. However, the detail requirement of applicability shall be decided during detailed engineering considering offered GIS design and meeting the requirements of Technical Specifications.
36	Cl. No. 8.3 of Section-GIS (Rev-05A) of TS	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	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.	Noted. However, the detail requirement of applicability shall be decided during detailed engineering considering offered GIS design and meeting the requirements of Technical Specifications.

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		and disconnectors are in open position. Safety grounding switch shall also be mechanically key interlocked with its associated disconnectors.		
37	Cl. No. 8.6 of Section-GIS (Rev-05A) of TS	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.	Noted. However, detail shall be finalized during detailed engineering meeting the requirements of Technical Specifications.
38	Cl. No. 11.2 of Section-GIS (Rev-05A) of TS	Insulation co-ordination and selection of surge arrester:	The same shall be excluded from scope.	Insulation coordination and the selection of Surge Arrestors is included under present scope of contract. Bidder to quote accordingly.
39	Cl. No. 11.3.2 of Section-GIS (Rev-05A) of TS	Surge arrester shall be disconnect-link type and be attached to the gas-insulated system in such a manner that they can be readily disconnected from the system while the system is being dielectrically tested.	Noted. However gas works shall be required to do the same. Also we do not foresee any requirement of GIS LA.	GIS LA is envisaged for Navsari (New) GIS substation. Further, Bidder to comply the requirement of Technical specification of bidding documents.
40	Cl. No. 15.2.1 of Section-GIS (Rev-05A) of TS	It shall comprise structural frames completely enclosed with specially selected smooth finished, cold rolled sheet steel of thickness not less than 3 mm for weight bearing members of the panels such as base frame, front sheet and door frames, and 2.0mm for sides, door, top and bottom portions.	As per the standard practice, for the weight bearing members a sheet thickness of 2.5 mm is more than sufficient and as a GIS manufacturer we recommended the same and for non weight bearing members the same is 2 mm thick. We request customer to kindly confirm the same.	Bidder to comply the requirement of Technical specification of bidding documents.
41	Cl. No. 22 of Section-GIS (Rev-05A) of TS	All transport packages containing critical units viz Circuit breakers and Voltage transformers shall be provided with sufficient number of impact recorders (on returnable basis) during transportation to measure the magnitude and duration of the impact in all three directions.	VTs being an critical equipment only impact recorders shall be provided for VTs. We request customer to kindly accept the same.	Bidder to comply the requirement of Technical specification of bidding documents.
42	Cl. No. 23.9 of Section-GIS (Rev-05A) of TS	Cost of the raised platform for temporary storage is deemed to be included in overall cost. The raised platform needs to be made readybefore arrival of GIS equipment at site. The contractor may use the available storage areas at site with permission of site in charge.	The Cost of any specific requirements with regards to Platform or civil works are excluded from GIS OEM Scope.	Bidder to comply the requirement of Technical specification of bidding documents.
43		Type test for Adapters	We do not envisage performing type test on Adapter module used to connect the existing GIS to present GIS. The performance of the adapter shall be verified using simulation results which we shall share for	Type test on the Adapter module is to be provided by the GIS manufacturer as per the requirement of bidding documents. Bidder to quote accordingly.

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			customer review. Request customer acceptance on the same.	
44		Availability of Existing GIS make supervisor + Tools to operated Existing GIS make GIS	We request customer to kindly make available Existing GIS make supervisor at site for entire duration of coupling of present GIS to existing GIS. Also the tools, consumables, required to open existing GIS shall be scope of customer/Existing GIS make. Any charges occurring on account of Existing GIS make supervisor and tools shall be borne by purchaser. Request customer to kindly confirm the same.	For extension of GIS, the supervisor of existing GIS manufacturer and all tools and tackles as well as consumables/gaskets, etc. as required, are to be arranged by the bidder under present scope.
45		Section view	Please support with the AutoCAD copy of section view and plan view	The requisite details/drawings shall be provided to successful bidder during detailed engineering stage. However, bidder is advised to visit the site as per Cl. No. 3.5 of the section project.
46		Site photos	Request customer to kindly support with site photos if available.	Bidder is advised to visit the site as per Cl. No. 3.5 of the section project.
47		Shutdown	A shutdown plan of the existing substation is mandatory and is required for a maximum of 3 times. A detailed schedule can be furnished during the time of project execution.	The optimum shutdown plan of the extension of substation shall be decided during commencement of site execution.
48		Responsibility	Bidder will not be held responsible for any failure of the existing switchgear while the mentioned activities are in progress, nor after the installation of the adaptors including the new bays is over, whatsoever.	Bidders to take note that in case of failure of existing GIS module(s)/switchgear where the bidder has performed (supply & supervision) the extension or any other activity (activity intend to execute related to bidder supplied material / bidder supervised work), the responsibility of failure of same shall be of the bidder.
49		Layout for 400 kV GIS at Navsari New	we request customer to kindly accept I type layout for 400kV Navsari GIS part.	Bidder to comply the requirement as per the provisions of bidding documents.
50		Requirement of adapter for Navsari	Please let us know the make of existing GIS for 765 kV/420 kV GIS at Navsari. Adapter to connect 420kV GIS of Navsari to Navsari New is in whose scope?	Bidder to consider same GIS Busbar Modules for 400/220kV Navsari New as well as Navsari Extension substation under present contract. Bidder to quote accordingly.
51		Navsari GETCO	Do we need to follow GETCO specification for 245 kV GIS bay at Navsari GETCO.	Bidder to comply the requirement as per the provisions of bidding documents.
52		Drawings of existing GIS	Please support with drawings of existing GIS and interface drawings.	The requisite details/drawings shall be provided to successful bidder during detailed engineering stage. However, bidder is advised to visit the site as per Cl. No. 3.5 of the section project