Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)
Transmission Business Group
Materials Management, 5th Floor, Plot No.25,
Sector-16A, Noida, Uttar Pradesh, PIN No: 201301
Phone: 0120-6748541, Email: gaurav.agarwal@bhel.in

CORRIGENDUM - 04 TO NIT NO-75838

Dated 19.08.2023

Subject: Corrigendum-04 to Tender enquiry for Pre-bid Tie up for Supply & Services of 400 kV & 220 kV GIS FOR POWERGRID_SS30T PROJECT.

Project	: Powergrid_SS30T (Greater Noida & Jalpura)
Equipment / Item	: SUPPLY & SERVICES OF 400kV & 220kV GIS
Enquiry No/Date	: 61G2400135 Dated 31-07-2023
BHEL NIT NO	: 75838
Original Tender due date	**: 11.08.2023**

This Corrigendum is issued by BHEL TBG against above mentioned NIT/ enquiry for-

a) Pre-poning the tender opening time from 16:00 Hrs to 11:30 Hrs. Tender submission due date and time, ie. 21-08-23, 11:00 Hrs shall remain same. All bids received till 11:00 Hrs on 21-08-23 shall be opened on 11:30 Hrs on same day through Tender Box.

b) Issuing the Technical clarifications-2 (enclosed) and

c) Issuing the pre-bid Commercial clarifications (enclosed).

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

Bidder to ensure submission of offer on or before due date.

Note: Tender ID in CPP Portal is **2023_BHEL_27237_1.**

Thanking you

-------Sd/------
Gaurav Agarwal
BHEL TBG, NOIDA

BHEL Clarification-2 19/08/2023 for Pre-bid tie up for GIS Substation Package SS-30T associated with Establishment of Intra-state Transmission System for Construction of 400/220 kV, 2x500 MVA GIS substation Metro Depot (Gr. Noida) with associated lines and 400/220KV, 2x500 MVA GIS substation Jalpura with associated lines through Tariff Based Competitive Bidding (TBCB) route prior to RfP bid submission by POWERGRID to BPC.Specification No.: CC/T/W-GIS/DOM/A00/23/05274

Sl. No.	Clause No.	Text as per Bid	Bidder's Queries	Clarification
1.	GIS-Rev 5A 5.27	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.
2.	GIS-Rev 5A 5.7	For Double Main bus switching scheme during a fault in CB compartment, No bus bar permitted out of service during maintenance and repair/replacement.	For 400 & to 220 kV GIS - Offered GIS type 8DQ1 (400 kV) and type 8DN9 (220 kV) is having separate busbar and busbar disconnector compartments. Further, offered GIS is our globally proven type tested design having passive non segregated busbar design meeting all the functional requirements of service continuity as per specifications. We confirm offered GIS is line with all latest requirements of IEC 62271-203.	Bidder to comply the requirement of Technical specification of bidding documents.
3.	GIS-Rev 5A 5.42	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.
4.	GIS-Rev 5A 5. General design and safety requirement	5.3 The switchgear, which shall be of modular design, shall have complete phase isolation.	For the offered 220kV GIS design, the busbar is 3 phase encapsulated and all other module are 1 phase encapsulated type, whereas in 400kV GIS design all modules along with busbar is 1 phase encapsulated type. This design is fully type tested as per IEC 62271-203 and has been accepted by many centre and state utility.	Please refer clause no 2.2 of Section GIS rev05A, both options 1-phase/3phase encapsulated are acceptable for 220kV . For 400kV and above 1 phase encapsulated type design is acceptable.
5.	GIS-Rev 5A 5.8	The material and thickness of the enclosures shall be such as to withstand an internal flash over without burns through for a period	Our offered GIS design are completely type tested for internal arc test in line with latest requirements of IEC. We confirm compliance to IEC 62271-203. (Table 4)	Bidder to comply the requirement of Technical specification of bidding documents.

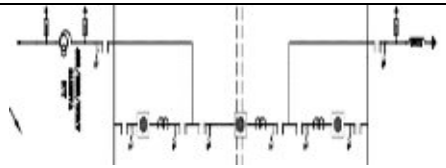
Sl. No.	Clause No.	Text as per Bid	Bidder's Queries	Clarification
		of 300 ms at rated short time withstand current.	for all the voltage levels.  	
6.	GIS-Rev 5A 5.31	ii) Any other alarm necessary to indicate deterioration of the gas insulating system.	Please note that such kind of deterioration is not possible to check when GIS is in service. But separate equipment is available to check the quality of gas.	Noted
7.	GIS-Rev 5A 5.35	For sliding type compensators, markers/pointers shall be provided to observe expansion or contraction during climatic conditions.	The provision of marker /pointer in compensator is not envisage, request to accept the same	Bidder has to comply the requirement of TS. Bidder may please quote accordingly.
8.	GIS-Rev 5A 5.39.3	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 either internally or 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 specified in the technical specification.
9.	GIS-Rev 5A 5.42	Extension of GIS	We confirm the provision for future extension is available in the offered 220kV and 400kV GIS meeting functional requirement of service continuity. We understand that any requirement of design and supply of interface module along with the associated hardware etc. as per tender shall be part of OEM performing future extension.	Bidder has to provide interface module on both side of GIS buses. Further Please refer Annexure-III, 1. (i) v., *"End Piece (Interface) modules with the isolating test link for Future extension (on both side) of Bus bar module shall be considered based upon GIS Layout."*

Sl. No.	Clause No.	Text as per Bid	Bidder's Queries	Clarification
				Further, "The end piece module shall be designed in such a way so that future GIS module may be tested without extending voltage to existing bus by removing the test link. End piece interface module for both the buses shall be in one alignment. "
10.	GIS-Rev 5A 5.42.3	Conceptual Interface Module Drawing is attached as Annexure-9	kindly share the annexure -9	Annexure-9 is attached in TS GIS-Rev05 at page no. 91 0f 105.
11.	GIS-Rev 5A 6.3	Pre insertion resister:	As per section project and BOQ, we understand that PIR is not required in any bay, hence excluded from the scope of supply of GIS OEM.	Confirmed.
12.	GIS-Rev 5A 6.6.7	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 supply of transducers is excluded from GIS Scope of supply	The contractor shall supply 03 set of transducers under the present contract and the cost of the same is to be built up by bidder under GIS equipment.
13.	GIS-Rev 5A 6.6.8	Circuit Breaker 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 other control and protection function. These spare NO and NC contacts shall be wired upto the local control cubicle.	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

Sl. No.	Clause No.	Text as per Bid	Bidder's Queries	Clarification
14.	GIS-Rev 5A 6.7.2	c)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
15.	GIS-Rev 5A 6.8	Controlled Switching Device (CSD):	We Observe that their is mismatch between section project and BOQ. Hence please clarify the requirement of CSD, Also mention in which bay it is required	CSD shall be used in 400kV ICT & Bus Reactor Bays, accordingly bidder may quote as per BPS.
16.	GIS-Rev 5A 7.2.5	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).	For 220kv and 400kV GIS Only electrical inter-locks is possible between DS & ES. We do not envisage providing any mechanical interlocks. Request customer to kindly accept the same.	Bidder to comply the requirement of Technical specification of bidding documents.
17.	GIS-Rev 5A 7.2.10	Each disconnector shall be supplied with an 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	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.

Sl. No.	Clause No.	Text as per Bid	Bidder's Queries	Clarification
		cabinet.		
18.	GIS-Rev 5A 7.2.13	The disconnectors and safety grounding switches shall have mechanical/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	The disconnectors and the safety grounding switches are separate modules in GIS design and shall have electrical inter-locks between them. However the required padlocking facility shall be provided for the manual interlocking for additional protection.	Bidder to comply the requirement of Technical specification of bidding documents.
19.	GIS-Rev 5A 8.3	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. Safety grounding switch shall also be mechanically key interlocked with its associated disconnectors.	The disconnectors and the safety grounding switches are separate modules in GIS design and shall have electrical inter-locks between them. However the required padlocking facility shall be provided for the manual interlocking for additional protection.	Bidder to comply the requirement of Technical specification of bidding documents.
20.	GIS-Rev 5A 8.6	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
21.	GIS-Rev 5A 11.2.	Insulation co-ordination and selection of surge arrestor:	we understand that surge arrester is required and it is of AIS type, hence excluded from GIS scope of supply.	AIS Type Surge arrester are envisaged and shall be in scope of contractor.

Sl. No.	Clause No.	Text as per Bid	Bidder's Queries	Clarification
22.	GIS-Rev 5A 11.3.2	Surge arrestor 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 are not envisaged.
23.	GIS-Rev 5A 15.2.1	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.
24.	GIS-Rev 5A 22	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 hence, 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.
25.	Annexure-IV Specific Requirement 07 with Annexures Clause No 6.8.2	The CSD shall be provided in following circuit breakers:	please confirm the requirement of CSD.	Please refer our reply at Sl. No. 15 above.

Sl. No.	Clause No.	Text as per Bid	Bidder's Queries	Clarification
26.	1.0 Section project 3.1.2	220 kV, 40kA for 1 Sec GIS Bays • 220kV ICT bays: 2 nos. • 220kV Bus-coupler Bay: 1 no • 400 kV Line Bays: 2 nos.	We observed that there is mismatch between Section Project & BOQ. Additional Future bays are given in section project which are not available in Tender BOQ. Kindly confirm the exact requirement.	It is clarified that in the referred clause of Section Project, 220kV line bays are envisaged. Further, no future bay is envisaged in section project. Accordingly, bidder may quote as per BPS.
27.	1.0 Section project 5. PHYSICAL AND OTHER PARAMETERS	Altitude: below 1000 meter above mean sea level (MSL) Snow fall: No Seismic Zone: As per IS 1893 (Part 1) Wind Zone: As per IS-875 (Part 3) Min./Max. Ambient Temperature: 0 / 50 degree centigrade Coastal Area Consideration: No	By looking at yearly average ambient temperature of site, we request to accept 40 degree C as maximum design ambient temperature for GIS. We have supplied so many GIS with 40 degree C design ambient temperature to various utilities in India & Abroad.	Bidder may quote as per provisions of bidding documents.
28.	Annexure-III I ,i) GIS busbar module	iii. Three (3) numbers 1-phase Potential Transformers complete with manual operated isolating Switch/device.	As per given reference clause we have considered manual integrated isolator for 220kV and 400kV busbar voltage transformers. No separate disconnectors for busbar are envisaged, Kindly confirm.	Bidders are to quote as per provisions of the bidding documents.
29.	Annexure-III I, ii) Gis line bay module	i One (1) number 3-phase, SF6 insulated circuit breaker (#) with/without PIR complete with operating mechanism.	kindly clarify the requirement of PIR in 400kV GIS bay.	Bidder to quote as per BPS.
30.	Typical module 400kV SLD		kindly clarify the type of configuration required for 400kV GIS , as in SLD it is I-type arrangement shown and in BOQ/GIS RFQ it is mention as double busbar arrangement .	Kindly refer clause no 5.0 of Section project "Bus Switching Scheme shall be Double Main for 220kV & 400KV GIS"

Project POWERGRID_SS30T (Greater Noida & Jalpura)
Item SUPPLY & SERVICES OF 400kV & 220kV GIS
NIT No. NIT No_75838_Enquiry No_61G2400135 Dated 31-07-2023

CFT recommendation for queries raised by bidders during pre-bid meeting on NIT's Terms and Conditions **Date: 18-08-23**

Pre-bid meeting was held on 07-08-2023. M/s GE, M/s Hyosung, M/s Siemens and M/s Toshiba have participated in pre-bid meeting. M/s GE and Siemens have submitted the queries over Commercial terms of NIT. These have been deliberated amongst CFT members. Based on input from TBG-Mktg, following Commercial clarifications/ changes in NIT terms are recommended by CFT for issuance to bidders-

Sl.No.	Clause No.	Description as per NIT	Bidder's query/request during pre-bid discussion	BHEL Reply to be issued as Corrigendum
1	18 of STC	DEFECT LIABILITY PERIOD (GUARANTEE SPECIFIC CLAUSE): The equipment / material supplied and services rendered (if applicable) shall be guaranteed to be free from all defects and faults in design & engineering, material, workmanship & manufacture and in full conformity with the Purchase Order / Contract, Technical Specifications & approved drawings / data sheets, if any **for 48 months from the date of Taking Over/Completion of Facilities.** Note: Contractual completion time (Taking Over/Completion of Facilities) shall be 30 months from the date of NOA from Powergrid.	For bidder qualifying through Route-1, Defect liability period shall be 12 months from the date of Taking over.	DEFECT LIABILITY PERIOD (GUARANTEE SPECIFIC CLAUSE): The equipment / material supplied and services rendered (if applicable) shall be guaranteed to be free from all defects and faults in design & engineering, material, workmanship & manufacture and in full conformity with the Purchase Order / Contract, Technical Specifications & approved drawings / data sheets, if any **for 48 months (for bidders qualifying through route-2 and route-3)/ 12 months (for bidders qualifying through route-1) from the date of Taking Over/Completion of Facilities & issuance of TOC by POWERGRID.** Note: Contractual completion time (Taking Over/Completion of Facilities) shall be 15 months from the date of NOA from Powergrid. All other details of this clause shall remain same as per NIT.
Note-	Committee has reviewed the other pre-bid queries related to Commercial Terms and conditions of NIT. After deliberations, Committee recommends that "All other terms and conditions of NIT shall remain same."			