Bharat Heavy Electricals Limited

(A Govt. of India Undertaking)
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CORRIGENDUM - 12 TO NIT NO-66823

Dated 16.09.2022

Subject: Corrigendum-12 to Tender enquiry for Pre-bid Tie up for Supply & Services of 230kV and 66kV GIS for CPCL Nagapattinam Refinery Project.

Project	: CPCL Nagapattinam Refinery PROJECT
Equipment / Item	: SUPPLY & SERVICES OF 230kV and 66kV.
Enquiry No/Date	: 61Q2300095 Dated 16.07.2022
BHEL NIT NO	: 66823
Original Tender due date	**: 18.07.2022**

This Corrigendum is issued by BHEL TBG against above mentioned NIT/ enquiry **for issue of Technical Corrigendum-03 (enclosed).**

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_15373_1.**

Thanking you

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

Ref. No. **CPCL Technical Corrigendum-02**

Project: **Design, Engineering, Supply, Erection*, Testing & Commissioning of 230kV & 66kV GIS for Cauvery Basin Refinery (CBR), Chennai Petroleum Corporation Ltd. (CPCL) at Nagapattinam, Tamil Nadu.**

Date: **14.09.2022**

Sl. No.	Document Description of Original Technical Specification	Technical Corrigendum-03 Remarks, if any
1	**Section-1** **Annexure-BOQ 230kV & 66kV GIS CPCL**	No change
2	**Section-1** **Section-1.2 & 1.6**	No change
3	**Section-2**	Please refer **Annexure-Technical Amendment to Section 2 REV02**in addition to original **Section-2 and Annexure-Technical Amendment to Section 2 & Annexure-Technical Amendment to Section-2 REV02/ Corrigendum-4 from CPCL.** Following documents are added to Original Section-2 and Annexure-Technical Amendment to Section 2 & Annexure-Technical Amendment to Section-2 REV02/ Corrigendum-4 from CPCL.. - Annexure-Technical Amendment to Section-2 REV03/ Corrigendum-6 from CPCL. **Note:** The highlighted changes are related to present scope of work and hence, these are to be noted and complied by bidders, however, bidders are requested to go through the complete document for entire understanding.

Note: Amendment/ addendum/ clarification/ corrigendum issued herein shall form part of Technical Specification. All bidders to please note that amendment/addendum/ clarification/ corrigendum issued will supersede the respective clause/ sub-clause of Technical Specification Document to the extent for the clause/ sub-clause or part thereof the amendment is issued.

CORRIGENDUM NO: 12416A-EL-GIS-40101- 06

BIDDING DOCUMENT NO: 12416A-EL-GIS-40101

TENDER ID: 2022_DGMMC_8573_1

NAME OF WORK: GRID POWER DISTRIBUTION NETWORK 230KV GIS INCLUDING OUTDOOR EQUIPMENT AND 66KV GIS

PROJECT: 9MMTPA CBR PROJECT AT NAGAPATTINAM TAMIL NADU

Sr. No.	Part of the Bidding Document	Document Reference	Clause/ Item No	Subject	MODIFICATIONS/ ADDITIONS/ DELETIONS
1.	Tender Document	Volume-II Part 1 of 4 Page 738 of 2608	2.2	Section C6: Control, Relay and Metering Panels Local Control Cubicle (LCC)	**Modification:** Clause 2.2 is replaced as under: 2.2 Local Control Cubicle (LCC) LCC shall be provided along with GIS equipment for each bay. The cubicle shall be of floor mounted, free standing type **or bay mounted type according to vendor type tested design.** It shall have hinged, gasketed, lockable double doors. One door shall have a glass window through which switchgear controls can be viewed without opening the doors. The LCC shall be bottom cable entry type. Undrilled gland plates shall be supplied along with the cubicles. The LCC shall have a degree of Ingress Protection of **IP 42**. Panel lighting along with door switch and power receptacle shall be

Sr. No.	Part of the Bidding Document	Document Reference	Clause/ Item No	Subject	MODIFICATIONS/ ADDITIONS/ DELETIONS
					provided in each cubicle. Adequate nos. of space heater shall also be provided in the Cubicles. The LCC cubicles shall be kept in the GIS building.
2.	Tender Document	Volume-II Part 1 of 4 Page 613 of 2608	3.50	Section C2: SCOPE MATRIX ELECTRICAL	**Additional clause 3.50:** **Bidder to consider additional 2Nos. 415V, 63A MCCB feeders in ACDB supplied at 230kV GIS for owner's use (i.e. for IOCL Gas Terminal station).**

All other terms & conditions, stipulations, specifications etc. of Bidding Document including Corrigendum/Amendments, if any, issued earlier shall remain unaltered.

CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE

WORK DETAILS :		GRID POWER - 230kV & 66kV DISTRIBUTION NETWORK						
BIDDING DOCUMENT :		SPECIFICATION NO. 12416A-EL-GIS-40101						
Sl No	REFERENCE OF ENQUIRY DOCUMENT				BIDDERS QUERY LOT-1	OWNER/CONSULTANT REPLY LOT-1	BIDDERS QUERY LOT-2	OWNER/CONSULTANT REPLY LOT-2
	PART / VOLUME NO	PAGE NO	CLAUSE NO	SUBJECT				
1	-	-	-	-	-	-	We refer to Sl. No. 2 of the pre-bid replies issued which mentions that the bidder to consider for communication equipments at both the substations (refinery end and feeding end) in line with TNEB / TANTRANSCO requirements. To receive the details from TANTRANSCO/ TNEB officials we require proper authorisation from the customer along with complete details of the location of substation and the concern CE/ SE etc. We request you to kindly share the requirements for us to consider the same in our offer.	The details will be informed during detail engineering stage and to the successful bidder.
2	-	-	-	-	-	-	We refer to Sl. No. 13 of the pre-bid replies, which calls for all approvals and the related fees to be in bidder scope. We once again reiterate that our scope of approvals are limited to Drawings approval from CEA/ CEIG, submission of work completion report, arranging inspection and getting approval for commissioning of 230KV & 66KV GIS substation and associated auxiliary systems covered in the LSTK scope of work only. All other approvals are excluded from our scope of work. Kindly confirm	Comply to the tender requirements.
3	-	-	-	-	-	-	We refer to Sl. No.23 and 24 of the pre-bid replies which mentions that the bidder shall be responsible for all basic and detailed design of all equipments/systems. We will be carrying out the Basic & detailed design based on the inputs issued by Consultant/Client during the bid stage, any change after award will have implications both commercially and completion of the project. Kindly confirm	Execution of basic and detail engineering meeting the requirements of Client / Consultant / Contract terms and conditions is the responsibility of Bidder. No implication on commercial and time is acceptable meeting the contract requirements.
4	-	-	-	-	-	-	We refer to Sl. No. 51 of the pre-bid replies, wherein the response issued is not clear. Kindly clarify the assistance required i.e., manpower required, duration etc.	Manpower deployment is not envisaged. Assistance may be required for uploading information in CPCL- SAP system.
5	-	-	-	-	-	-	We refer to Sl. No. 60 of the pre-bid replies which mentions that only one single contract will be issued. Kindly confirm whether we have to consider the labour cess (BOCW) on the total contract or only for Civil and erection works	BOCW to be considered on the total contract value.
6	-	-	-	-	-	-	We ref to Sl No 78 where in you have clarified that necessary cable trays and supports over the pipe rack between 230/69KV Grid Transformers and 66KV GIS building shall be supplied by others accordingly our scope of work is exclusive of this item. Further necessary earthing arrangement of this cable trays are also excluded from the scope of this LSTK contract. Kindly confirm	Confirmed.
7	-	-	-	-	-	-	We refer to Sl. No. 83 of the pre-bid replies, which mentions that the service transformers are of outdoor type and slab above transformers and side firewalls shall be provided. Kindly confirm the requirement of side firewalls, which is not clear	Fire wall shall be provided in between the transformers. In addition, wall shall be provided on other end in addition to the slab over the transformers.
8	-	-	-	-	-	-	We refer to Sl. No. 158 of the pre-bid replies. Kindly note that Certain GIS manufactures are proposing to supply only integrated type LCC in 66kV GIS. Kindly confirm the same is acceptable as a change in otherwise will have cost and time implication on account of Type Test requirement etc	For clarification, refer Sr.No. 1 of Corrigendum 06
9	-	-	-	-	-	-	We refer to Sl.No. 168 of the pre-bid replies regarding Geo Technical reports issued by the Customer / Consultant. We understand that in case during execution stage, there is a variation in report on account of which foundations of equipments / buildings may change, the contractor shall be suitably compensated both on account of cost and time. Kindly confirm our understanding is correct	No cost or time extension are permitted.

CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE

WORK DETAILS :		GRID POWER - 230kV & 66kV DISTRIBUTION NETWORK						
BIDDING DOCUMENT :		SPECIFICATION NO. 12416A-EL-GIS-40101						
Sl No	REFERENCE OF ENQUIRY DOCUMENT				BIDDERS QUERY LOT-1	OWNER/CONSULTANT REPLY LOT-1	BIDDERS QUERY LOT-2	OWNER/CONSULTANT REPLY LOT-2
	PART / VOLUME NO	PAGE NO	CLAUSE NO	SUBJECT				
10	Vol-II-1	Page 610 of 2608	3.32	Electrical Control Panel (ECP) of Mosaic type for 66kV GIS (Monitoring of Incomer feeders, Bus couplers and bussectionalizers. Control and monitoring of EDG and 6.6kV Switchgear (incomer feeders, bus-coupler and outgoing transformer feeders) and 415V PCC/PMCC/EPMCC (Incomer feeders and bus coupler)). ECP for 66kV GIS shall be located in the CPP control room.	We understand that ECP to be supplied for only 66kV GIS is in scope of GIS LSTK Contractor. ECP for 6.6kV Switchgear (incomer feeders, bus-coupler and outgoing transformer feeders) and 415V PCC/PMCC/EPCC (Incomer feeders and bus coupler)) is not in scope of GIS LSTK Contractor. Kindly confirm.	Bidder understanding is not correct. ECP for 230kV GIS is located in 230kV GISbuildingshallbesuppled and installed by bidder. Common ECP for 66kVGIS,6.6kV Switchgear (incomer feeders, bus-coupler and outgoing transformer feeders)and 415V PCC/PMCC/EPCC (Incomer feeders and buscoupler)) is in the scope of bidder.	Kindly provide Exact Nos of outgoing feeders for 6.6kV switchgear, 415V PCC/PMCC/EPCC OR the no of feeders are to be considerd as specified in SLD.	Bidder to refer exhibit-9, Volume-II, part 2 of 4 for details regarding 6.6kV switchgear, 415V PCC/PMCC/EPCC feeders which are controlled from 66kV ECP.
11	Vol II-1	598 of 2608	2.22	Scope matrix	Battery limit for 66kV GIS area is GIS building only. Any other work like earthing , lighting or other major / minor civil works is not in the scope of LSTK Contractor. Outside GIS hall is in scope of CPP package.	Bidder understanding is not correct and forexact details refer electrical scope matrix (Volume-II, part 1 of 4, Section C2).	Kindly Specify the Battery Limit of 66kV GIS as it may have multiple interpretation.	Battery limit of 66kV GIS is already defined in various sections of the GIS tender document. For clarification, refer Sr. No.5 of Corrigendum 04.
12	Vol II-1	598 of 2608		Scope matrix	We don't envisage providing any cable supports/ trays on pipe rack (others scope) for 66kV / 6.6 kV Cable laying. LSTK contractor scope is only limited to laying cables.	Cable trays and supports over pipe rack between 230/69kV Grid transformers and 66kV GIS Building shall be supplied by others.However,66kV,6.6kV and other cables shall be supplied and installed by bidder.	We have not envisaged any fabrication work at Pipe rack between 220kV to 66kV GIS. Necessary earthing for PIPE Rack shall be provided by others. Kindly confirm	Confirmed that steel fabrication work at pipe rack is not included in bidder scope.
13	Vol II-1	812 of 2608	10.5	LIGHTING SYSTEM	We don't envisage any provision of dc critical lighting on pipe racks as it is outside the battery limit of LSTK contractor.	Comply to the tender specification .Details will be furnished during detail engineering stage.	We will provide dedicated uncabled feeder at 220V DCDB at 220kV GIS building. It is requested to provide Nos of feeders required and kW feeder rating.	For clarification, refer Sr. No.12 of Corrigendum-04
A. 230/66 kV GIS Specification								
14	VOLUME II (PART-1 of 4) Section C4	624 of 2608	4.1.10	The switchgear and all its components and accessories shall be designed for minimum maintenance during service.	Service continuity requirements are not mentioned very specifically. Hence, it is requested to please specify the requirements.	Comply to the tender specification.	For the future requirements of maintenance and repair of GIS, Service continuity requirements goes as per IEC 62271-203/ Annexure-F, howeverare, specific and firm details are required for service cointinuity for GIS. Hence, it is requested to please specify the requirements in line with applicable IEC.	For clarification, refer Sr. No.9 of Corrigendum 04
15	VOLUME II (PART-1 of 4) Section C4	625 of 2608	4.1.15	All supporting steel work shall be hot dip galvanised. All welding in GIS shall confirm the applicable codes and standards.	The details of galvanization is not provided such as minimum weight and thickness of zink coating. Please furnish the details.	The details of galvanization weight and thickness of zinc coating, refer painting specification,Volume-II, part 3 of 4, specification. B416-000-06-41-PLS-01.	The mentioned references are for painting and surface preparation at site and hence it is not applicable for galvanization requirements. Please review and provide the correct details.	Bidder to refer Clause B.4.3.6, ENGINEERING DESIGN BASIS (CIVIL, STRUCTURAL & ARCHITECTURAL) (B416-999-81-41-EDB-1001), Volume-II, part 3 of 4 for details regarding thickness of galvanization.
16	VOLUME II (PART-1 of 4) Section C4	628 of 2608	4.5.2	**GIS Gas Sections** The GIS shall be fully gas tight. The sealing system shall also effectively ensure against the ingress of moisture, dust and other contaminants into gas compartments. Double 'O' ring design be adopted to ensure gas tightness. All gas compartments shall contain suitable agent to absorb moisture and any other decomposition products of SF6 gas.	The equipment specific design requirements shall be as per OEM type tested design and applicable IS/ IEC standards and, accordingly, double 'O' ring design is not applicable.	Tender specification shall be complied.	It is to inform you again that as per best/ latest engineering practise and OEM standard and type tested design, single seal arrangement is capable of ensuring gas leakage per annum is <0.1% as per type test, much less than the requirement <0.5% as per IEC. Hence please review the requirement and confirm.	Comply to the tender requirement.
17	VOLUME II (PART-1 of 4) Section C4	630 of 2608	4.5.11	**For circuit breaker:** (d) "Over pressure" alarm level (for all compartments) This alarm level shall be provided to indicate abnormal high pressure rise in the gas compartment. Two sets of potential free contacts for remote indication/ annunciation shall be provided.	It is to clarify that all gas compartments are at same pressure in genearal and hence, over-pressure alarm is not required.	Tender specification shall be complied.	It may please be informed that as per OEM design all gas compartments are filled with same gas pressure. Hence over pressure alarm is not applicable. Further, rupture discs is provided in each gas compartment which burst during abnormal pressure rise, in case of severe faults. Hence please review the requirement and confirm.	Comply to the tender requirement.
18	VOLUME II (PART-1 of 4) Section C4	656 of 2608	8.4	**Seismic Qualification** GIS Manufacturer shall submit type test certificates, if applicable to prove seismic withstand capability. If identical GIS is not tested in the past, successful GIS Manufacturers shall furnish design calculation or carry out testing to prove seismic withstand capacities without cost and time implication to the purchaser.	GIS OEMs shall not able to submit any type tests related to seismic withstand capability, however, design calculations shall be provded. Please review.	Comply to the tender specification.	It is once agains submitted that GIS OEMs shall not able to submit any type tests related to seismic withstand capability, however, design calculations shall be provded. Please review and confirm.	Comply to the tender requirement.

CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE

WORK DETAILS :	GRID POWER - 230kV & 66kV DISTRIBUTION NETWORK						
BIDDING DOCUMENT :	SPECIFICATION NO. 12416A-EL-GIS-40101						
Sl No	REFERENCE OF ENQUIRY DOCUMENT				BIDDERS QUERY LOT-1	OWNER/CONSULTANT REPLY LOT-1	BIDDERS QUERY LOT-2	OWNER/CONSULTANT REPLY LOT-2
	PART / VOLUME NO	PAGE NO	CLAUSE NO	SUBJECT				
B. 230/66 kV GIS Specification								
19	VOLUME II (PART-1 of 4) Section C4	699 of 2608	4.1.10	**DESIGN AND CONSTRUCTIONAL FEATURES** **-230kV & 66kV GIS Specification** Suitable glass window/ telescopic port shall be provided in the circuit breaker, disconnect and grounding switch modules for ensuring proper contact making. The bearings and other such parts shall be permanently lubricated for the entire service life.	-	-	It is to be noted that as per OEM standard an type tested design, viewing window embedded on enclosure shall be provided on enclosure of disconnectors/ maintenance earth switch for viewing/ inspecting the contact position.Viewing window is not recommended for circuit breaker which is an arcing device. Please review and confirm.	For clarification, Bidder to refer Sl. No. 330 of prebid replies (LOT-1) uploaded in the CPCL portal.
20	VOLUME II (PART-1 of 4) Section C4	703 of 2608	4.5.6	**SF6 Gas System and associated Devices** **-230kV & 66kV GIS Specification** Sensors shall be provided in the GIS enclosure to detect the internal arc flash.	-	-	It may be noted that GIS is designed, manufactured and operated to prevent the occurance of internal fault within the GIS, and has a very very low probability of occurrence and all possible measures are taken into consideration while designing itself like gas leakage limitation, partitioning of compartment, high speed protection and interlocking of switching devices and hence, it is not recommended in a type tested design to introduce any type of sensor internally within the GIS to detect internal arc. The provision of PD sensors are sufficient enough to detect internal arc. Please review and confirm.	For clarification, Bidder to refer Sl. No. 334 of prebid replies (LOT-1) uploaded in the CPCL portal.
21	VOLUME II (PART-1 of 4) Section C4	704 of 2608	4.5.9	**SF6 Gas System and associated Devices** **-230kV & 66kV GIS Specification** Separate gas density monitor switch shall be provided for each equipment compartment including but not limited to Circuit Breaker, Current Transformer, Voltage Transformer, Surge Arrester, Isolator (separate monitor for bus bar and bus Isolator) & Earth Switch etc (for each compartment).	-	-	As per OEM standard and Type Tested design, bus and bus disconnector/ disconnector cum earth switch is placed in same gas compartment. Further, Bays are includes its bus bars as modules without any passivity of Bus Bars and accordingly, Gas density monitors are provided for each gas tight compartment. Hence separate monitor for bus bar and bus isolator is not applicable. Please review and confirm.	Comply to the tender requirement.
22	VOLUME II (PART-1 of 4) Section C4	708 of 2608	4.11.3	**Layout of GIS** **-230kV & 66kV GIS Specification** The layout shall ensure that GIS bus link section is provided for future extension of the GIS buses to avoid de-gassing and modification of the existing bus.	-	-	As per our understading, future extension module at both ends of bus-bar for future extension shall be provided. However, at the time of future extension, one-bus bar shall be in shut down condition and other bus-bar in service condition alternatively and existing feeders shall also be in service condition. Please review and confirm.	Comply to the tender requirement.
23	VOLUME II (PART-1 of 4) Section C4	712 of 2608	4.1.1 (l)	**GIS SWITCHGEAR** **-66kV GIS Specification** Breaker disposition must be horizontal to provide higher mechanical stability and ease in maintenance.	-	-	It is to submit that as per OEM standard and type tested design, which is widely proven worldwide 145kV GIS configuration & arrangements and enjoy successful trouble free satisfactory operation to it's various customers worldwide, wherein the circuit breaker modules are mounted vertically in a manner that minimum time for handling during installation, dismantling (or) for O&M purpose with easy access to each pole of the CB while handling of circuit breaker during operation & maintenance regime, whenever necessary, without need to removal of operating mechanism. In view of above, please review the requirement and confirm.	Manufacturer or OEM type tested design is acceptable.
24	VOLUME II (PART-1 of 4) Section C4	723 of 2608	6.1 (f)	**GIS TERMINATIONS** The design of the cable termination shall allow plugging and unplugging the EHV cable without need of opening the GIS and without any gas work or minimum work.	-	-	Power cable termination shall be in accordance with IEC 62271-209. As per IEC, for fixing of female cable termination at factory/ site shall necessarily shall require to degass the enclosure before any sort of plugging-in or plugging out of cable. In view of above, please review and confirm.	Bidder query not relevant and comply the tender requirement
25	VOLUME II (PART-1 of 4) Section D1	867 of 2608	2(c)	**DATA SHEET** **DISCONNECTOR** Switching withstand voltage at minimum operating gas pressure (Us) o Phase to earth (kVp)- 850 (kVp)	-	-	As per IEC, switching impulse withstand voltage is not applicable for 230kV GIS. It is only applicable for voltage ratings above 230kV. Please review and confirm.	Noted.
26	VOLUME II (PART-1 of 4) Section D1	873 of 2608	9(a)	**DATA SHEET** **CURRENT TRANSFORMER** Type- GIS Insulation-SF6	-	-	As per OEM standard and type tested design, the 230kV CT secondary windings are externally mounted around the enclosure and inside a metallic casing, and hence is shall not SF6 insulated. Please review and confirm.	Manufacturer or OEM type tested design is acceptable.
27	VOLUME II (PART-1 of 4) Section D1/ D2	891 of 2608	7(a)	**DATA SHEET** **GIS MECHANISM ENCLOSURE** Enclosure degree of protection- IP 64	-	-	As per OEM standard and type tested design, the mechanism box designed with degree of protection IP-41, which is sufficient for indoor sub-station. Please review and confirm.	For clarification, refer Sr. No.13 & 14 of Corrigendum-04
C. 230/66 kV GIS Specification								
28	VOLUME II (PART-1 of 4) Section C4	700 of 2608	4.1.21	**DESIGN AND CONSTRUCTIONAL FEATURES** In the event of arcing in compartment the arc should not extend to neighbouring compartment. Any failure to the enclosure of compartment shall not lead to damages in neighbouring compartment. In view of this continuous busbar without gas segregation is not acceptable.	-	-	The requirements of Service continuity, Repair and mainatainance can be ensured without the provision of segregation in the busbar compartment. Please review and confirm.	For clarification, refer Sr. No.9 of Corrigendum-04

CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE

WORK DETAILS :	GRID POWER - 230kV & 66kV DISTRIBUTION NETWORK							
BIDDING DOCUMENT :	SPECIFICATION NO. 12416A-EL-GIS-40101							
Sl No	REFERENCE OF ENQUIRY DOCUMENT				BIDDERS QUERY LOT-1	OWNER/CONSULTANT REPLY LOT-1	BIDDERS QUERY LOT-2	OWNER/CONSULTANT REPLY LOT-2
	PART / VOLUME NO	PAGE NO	CLAUSE NO	SUBJECT				
29	VOLUME II (PART-1 of 4) Section C4	626 of 2608	4.3.1	**GIS Enclosure** The GIS shall be of single-phase encloser type for voltage levels of 230kV.	-	-	For the offered 230kV, busbar shall be three phase encapsulated and the GIS modules shall be single phase encapsulated, this is in line with standard type tested design accepted by various utilities in India and abroad. Please review and confirm.	Comply to the tender requirement.
30	VOLUME II (PART-1 of 4) Section C4	702 of 2608	4.4.2	**GIS Gas Sections** Long bus runs shall be sectionalized into a number of gas compartments such that failure in any gas section does not affect the adjacent gas sections.	-	-	The requirements of Service continuity, Repair and mainatainance can be ensured without the provision of segregation in the busbar compartment. Please review and confirm.	For clarification, refer Sr. No.9 of Corrigendum 04
31	VOLUME II (PART-1 of 4) Section C4	703 of 2608	4.5.6	**SF6 Gas System and associated Devices** Sensors shall be provided in the GIS enclosure to detect the internal arc flash.	-	-	It may be noted that GIS is designed, manufactured and operated to prevent the occurance of internal fault within the GIS, and has a very very low probability of occurrence and all possible measures are taken into consideration while designing itself like gas leakage limitation, partitioning of compartment, high speed protection and interlocking of switching devices and hence, it is not recommended in a type tested design to introduce any type of sensor internally within the GIS to detect internal arc. The provision of PD sensors are sufficient enough to detect internal arc. Please review and confirm.	For clarification, refer Sl. No. 20 above.
32	VOLUME II (PART-1 of 4) Section C4	712 of 2608	5.1.1 (j)	**GIS SWITCHGEAR- Circuit Breakers** However, Voltage grading capacitors may be used across contacts for double interrupter designs for 40kAIC Circuit Breakers.	-	-	As per OEM standard and type tested design, PIR and CSD are not required for offered GIS requirement. Kindly review and confirm.	For clarification, Bidder to refer Sl. No. 313 of prebid replies (LOT-1) uploaded in the CPCL portal.
33	VOLUME II (PART-1 of 4) Section C4	712 of 2608	5.1.2(a)	**GIS SWITCHGEAR- Circuit Breakers** **230kV & 66kV** Circuit breakers installed close to large generating plant or controlling very long transmission Lines will be subjected to fault currents which may have delayed or no zero crossing for a considerable number of cycles due to a high X/R ratio of the system	-	-	Kindly confirm the X/R ratio and the DC component requirement for GIS CB from the transient studies for offered Power system design for review and confirmation at our end.	For clarification, Bidder to refer Sl. No. 314 of prebid replies (LOT-1) uploaded in the CPCL portal.
34	VOLUME II (PART-1 of 4) Section C4	712 of 2608	5.1.2(a)	**GIS SWITCHGEAR- Circuit Breakers** **230kV & 66kV** The GIS Manufacturer shall propose a suitable Circuit Breaker which can mitigate the high reactive component to achieve the opening of the Circuit Breaker at current zero within the normal operating time of the breaker.	-	-	As per OEM standard and type tested design, for the offered GIS CB, the DC component shall be 39%, please confirm the suitability for offered requirement	For clarification, Bidder to refer Sl. No. 315 of prebid replies (LOT-1) uploaded in the CPCL portal.
35	VOLUME II (PART-1 of 4) Section C4	720 of 2608	5.3.1 (f) (ii)	**Instrument Transformers** **230kV & 66kV** Terminals for Tan Delta measurement. These terminals under service conditions shall be connected to Grounding by means of links.	-	-	Tan Delta Tests are not applicable for GIS Instrument transformers. Please review and confirm.	For clarification, Bidder to refer Sl. No. 316 of prebid replies (LOT-1) uploaded in the CPCL portal.
36	VOLUME II (PART-1 of 4) Section C4	721 of 2608	5.3.2 (e)	**Voltage Transformers** **230kV & 66kV** However, for revenue class metering applications the accuracy class shall be 0.2S for that core.	-	-	As per OEM standard and type tested design, GIS VT accuracy class that can be confirmed is class 0.2. Kindly review and confirm.	For clarification, refer Sr. No.7 & 11 of Corrigendum-04
37	VOLUME II (PART-1 of 4) Section C4	628 of 2608	4.4.3	**SF6 Gas System and associated Devices** **66kV** Cable box where cable-sealing end is installed shall have its own independent gas compartment, with gas monitoring.	-	-	As per OEM standard and type tested design, for offered 66kV GIS, the Cable termination module and line disconnector shall be incorporated in the same gas compartment. Kindly review and confirm.	For clarification, Bidder to refer Sl. No. 332 of prebid replies (LOT-1) uploaded in the CPCL portal.
38	VOLUME II (PART-1 of 4) Section C4	628 of 2608	4.4.5	**SF6 Gas System and associated Devices** **66kV** Compartmentalisation shall be provided for circuit breaker, Busbar, Current transformer, Voltage transformer, Surge arrester, Disconnector along with Earthing switch and Cable sealing end.	-	-	As per OEM standard and type tested design, for offered 66kV GIS, CT and CB shall be in same gas compartment, also the Cable end and line disconnectors shall be incorporated in the same gas compartment. Kindly review and confirm.	For clarification, Bidder to refer Sl. No. 333 of prebid replies (LOT-1) uploaded in the CPCL portal.
39	VOLUME II (PART-1 of 4) Section C4 & C5	629 of 2608 703 of 2608	4.5.6	Section C5: 66kV GIS Specification Section: C4: 230kV GIS specification Clause - 4.5.6 Sensors shall be provided in the GIS enclosure to detect the internal arc flash.	-	Online Pd monitoring system as per clause 4.12 shall be considered along with internal arc flash sensors.	Please note that Sensors for internal arc detection are not required for 230kV and 66kV GIS. Kindly confirm	Comply to the tender requirement.
40	VOLUME II (PART-1 of 4) Section C4 & C5	655 of 2608 729 of 2608	8.2	Section C5: 66kV GIS Specification Section: C4: 230kV GIS specification 8.2 Grounding Tester As an additional measure for the safety of personnel it shall be possible to ascertain that the particular section of the plant is de-energised before a Ground switch is closed onto the conductor. A capacitive tap shall be provided on each gas section. One loose instrument common to the complete plant, shall be supplied for connection to a capacitive tap to indicate whether the circuit is live or dead. Provision of tap to indicate status live or dead, capacitive taps and the instrument shall be optional and quoted for separately. Required electrical interlock with VT secondary shall also be provided to ensure the feeder/bus is dead.	-	-	Please note that Capacitive voltage tap/detector is not required for 66kV and 230kV GIS. Kindly confirm	Comply to the tender requirement.

CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE

WORK DETAILS :		**GRID POWER - 230kV & 66kV DISTRIBUTION NETWORK**						
BIDDING DOCUMENT :		**SPECIFICATION NO. 12416A-EL-GIS-40101**						
Sl No	**REFERENCE OF ENQUIRY DOCUMENT**				**BIDDERS QUERY LOT-1**	**OWNER/CONSULTANT REPLY LOT-1**	**BIDDERS QUERY LOT-2**	**OWNER/CONSULTANT REPLY LOT-2**
	PART / VOLUME NO	**PAGE NO**	**CLAUSE NO**	**SUBJECT**				
41	-	-	General	Communication Equipment	-	-	kindly confirm Existing Communication equipment if any at TNEB end i.e.: PLCC/FOTE	For clarification, bidder to refer S.No. 2, 144, 145, 241, 274, 294, 490 of prebid replies (LOT-1) uploaded in the CPCL portal.
42	-	-	General	Communication Equipment	-	-	kindly confirm details of RLDC Communication equipment details	For clarification, bidder to refer , S.No. 3, 38, 146, 147, 251, 475 of prebid replies (LOT-1) uploaded in the CPCL portal.
43	-	-	General	66kV EHV cable Size	-	-	As per clarification it has mentioned min 1Cx630 sqmm, kindly confirm whether it shall be Cu or AL??	For clarification, bidder to refer clause no. 5.7.1 , Cable details, Volume-II, Part-3 of 4, Page 1128 of 2608.
44	-	-	General	66kV EHV cable seath	-	-	Whether it should be corrugated Al sheathed or Lead sheathed?? Pl confirm	For clarification, bidder to refer clause no. 5.7.1 , Cable details, Volume-II, Part-3 of 4, Page 1128 of 2608.
45	-	-	General	66kV CRP	-	-	For 66kV CRP, We suggested to accommodate 2 feeder's control & protection in single panel , pls confirm	Comply to the tender requirement.
46	-	-	-	CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE FOR GRID POWER - 230kV 66kV DISTRIBUTION NETWORK Sl No.276 Query : We understand from pre-bid discussion that the present scope 230kV switchyard area and 66kV GIS area are under clean environment. Hence, we understand there is no need to perform Hazop/Hazid studies. Please confirm whether bidder's understanding is in order. Reply : Confirming that both 230kV and 66kV GIS buildings are located in safe area	-	-	As per referred pre-bid clarification, present scope 230kV switchyard area and 66kV GIS area are located in safe area. Hence, we understand there is no need to perform Hazop/Hazid studies. Please confirm whether bidder's understanding is in order.	Confirmed.
47	-	-	-	CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE FOR GRID POWER - 230kV 66kV DISTRIBUTION NETWORK Sl No.117 & 162 Sl No. 117 - Special Tools shall be considered separately for 230kV and 66kV GIS. 'Sl No. 162 - Details has to be provided by OEM and same shall be approved by Owner.	-	-	Request you to kindly clarify the requirement of special tools as the same is not clear from the referred clauses.	Details regarding special tools requirement has to be provided by OEM during bid stage.
48	-	-	-	CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE FOR GRID POWER - 230kV 66kV DISTRIBUTION NETWORK Sl No.128 Common ECP or 66kV GIS ,6.6kV Switchgear (incomer feeders, bus-coupler and out going transformer feeders) and 415V PCC/PMCC/EPCC (Incomer feeders and bus coupler) is in the scope of bidder.	-	-	We understand that control and monitoring cable required from 6.6kV & 415V switchgear to common ECP panel is not be in bidder's scope as 6.6kV and 415V switchgears are not in GIS LSTK bidder's scope. Please confirm whether bidder's understanding is in order.	Confirmed.
49	-	-	-	CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE FOR GRID POWER - 230kV 66kV DISTRIBUTION NETWORK Sl No.144 & 145 Sl No. 144 - PLCC or FO system as required by TNEB/ TANTRANSCO authority shall be provided. 'Sl No. 145 - PLCC or FO on both ends of the line is included in the Scope of Contract	-	-	We understand that supply of associated wave trap or CVT at the TNEB/ TANTRANSCO end is not in scope of GIS LSTK. Please confirm whether bidder's understanding is in order.	Bidder understanding is not correct and these are included in bidder scope. For clarification, bidder to refer S.No. 2, 144, 145, 241, 274, 294, 490 of prebid replies (LOT-1) uploaded in the CPCL portal.
50	-	-	Corrigendum - 02, Sl No.04	Corrigendum - 02, Sl No.04 Wherever pipe rack /cable rack is available, bidder to make use for above ground cabling. Cable trays and its supporting accessories on cable racks between 230kV GIS and 66kV GIS shall be provided by Owner. Cable trays within battery limit and the pipe rack/cable rack shall be in the scope of bidder.	-	-	We understand that only cable trays for 230kV switchyard is in bidder's scope. Further, pipe rack/cable rack outside the 230kV switchyard fence is not in scope of bidder.	Bidder understanding is not correct. All cable trays for 230kV switchyard / GIS (within 100x100Mtr) and 66kV GIS are in bidder's scope. Cable trays on the pipe rack is provided by others
51	-	-	3.1.1	Volume-II-1 : Section C10.1 : EHV Cable Clause No. 3.1.1 The conductor shall consist of annealed plain copper wires, well compacted, stranded/segmented/Miliken. The conductor shall have a smooth surface finish. The conductor shall be clean and free from foreign particles which may create high stress points due to contamination. The grade and quality of material used shall be as per IS/IEC.	-	-	We understand that circular type of conductor is also acceptable, as stranded/segmented/Miliken type may not be available for lower cross-section EHV cables. Please confirm whether bidder's understanding is in order.	Confirmed. However, conductor shall be stranded type.

CONSOLIDATED BIDDERS' PRE-BID QUERIES AND RESPONSE

WORK DETAILS :	GRID POWER - 230kV & 66kV DISTRIBUTION NETWORK						
BIDDING DOCUMENT :	SPECIFICATION NO. 12416A-EL-GIS-40101						
Sl No	REFERENCE OF ENQUIRY DOCUMENT				BIDDERS QUERY LOT-1	OWNER/CONSULTANT REPLY LOT-1	BIDDERS QUERY LOT-2	OWNER/CONSULTANT REPLY LOT-2
	PART / VOLUME NO	PAGE NO	CLAUSE NO	SUBJECT				
52	VOLUME II (PART-1 of 4) Section C4 & C5	642 of 2608 717 of 2608	5.2.7	-	-	-	Clause 5.2.7 : Disconnect Switches & Ground switches : • For 66 kV GIS : Three Position Earth switch for 66kV GIS shall be motor operated type .High Speed Earth switches shall be snap operated type. • For 220 kV GIS : Work in progress Earth switches shall be motor operated type . High Speed Earth switches shall be snap operated type.	Manufacturer or OEM type tested design is acceptable.
53	VOLUME II (PART-1 of 4) Section C4	635 of 2608	4.13.2	-	-	-	Clause 4.13.2 : BUSBAR ASSEMBLIES For 220 kV GIS ,the Busbar encapsulation of Three Phase type is type tested design accepted by TCE and IOCL for earlier executed projects. We wish to bring to your kind notice that the our Type tested design meets the requirements of Service continuity, repair and maintenance requirements as per specifications	Comply to the tender requirement
54	VOLUME II (PART-1 of 4) Section C4 & C5	646 of 2608 720 of 2608	5.3.1	-	-	-	Clause 5.3.1 : Terminals for Tan Delta Measurements Tan Delta Test : Please note for GIS Tan Delta is not applicable.	For clarification, refer Sr. No.8 & 10 of Corrigendum-04.
55	VOLUME II (PART-1 of 4) Section C4 & C5	646 of 2608 721 of 2608	5.3.2	-	-	-	Clause 5.3.2: Accuracy Class GIS VT 0.2s : Please find herewith Extract of IEC 61869-3, Class- 0.2s is not applicable for VT.	For clarification, refer Sr. No.7 & 11 of Corrigendum-04.
56	VOLUME-II (PART 1 of 4) Section C6	738 of 2608	2.2	-	-	-	We wish to inform you that as per our earlier executed projects with EIL/Refineries Bay mount LCC were acceptable. We request a TCE/CPCL to consider the same as this would save valuable space	For clarification, refer Sr.No.1 of Corrigendum-06
57	VOLUME II (PART-1 of 4) Section D1 & D2	General	-	-	-	-	Temperature ambient 3150A at 45degree centigrade as mentioned in Technical data sheets for 66kV and 220kV GIS: we wish to inform you that our standard Type test reports are for 145 kV & 220 kV GIS are tested for 3150A at an ambient of 40 degree C.(As per IEC 62271-1). However for ambient temperature of 45 Degree C the equipment shall be derated as per IEC standards which shall be derated to 2900A. (enclosed extract of IEC 62271-1)	Comply to the tender requirement.
58	VOLUME II (PART-2 of 4)	968 of 2608 969 of 2608	-	-	-	-	Metering & Protection SLD for 230 & 66 kV GIS – TCE.12416A-EL-4005-CP-40049- Fuse at primary side. In the SLD for the metering VT fuse connection has been shown we understand that VT with a manual integrated isolation (IID)device should be given for the same	Manufacturer or OEM type tested design is acceptable.
59	VOLUME II (PART-1 of 4) Section C4 & C5	-	8.2	Volume-II-1 : Section C4 : 230kV GIS Specification & Section C5 : 66kV GIS Specification As an additional measure for the safety of personnel it shall be possible to ascertain that the particular section of the plant is de-energised before a Ground switch is closed onto the conductor. A capacitive tap shall be provided on each gas section.	-	-	We would like to inform that capacitive tap / CVD is not required for 230kV & 66kV GIS, as each bay is already equiped with voltage transformer from which feeder's dead or alive status can be known. Futher, provision of the same is not feasible for voltages below 132kV as per available GIS product portfolio. Hence, we request CPC/TCE to exclude this requirement for both 230kV and 66kV GIS & propose suitable amendments.	Comply to the tender requirement.
60	-	-	Corrigendum-02: 2.1, 2.2, 2.3	-	-	-	Corrigendum-02: 2.1, 2.2, 2.3 In Sl.no-19 it has been mentioned to consider Chemical filter and Hydrocarbon and toxic gas (H2S) detection shall be provided in fresh air duct of control room. Where as in prebid reply LOT-1, Sl.no-284 (mechanical) it has been confirmed that sub station is in safe zone. Hence, chemical filters is not required. Please clarify.	Bidder to comply to the requirement mentioned in S.No. 19, corrigendum-2.