PROJECT : COAL GASIFICATION BASED FERTILISER PLANT AT TALCHER, ODISHA
TENDER NO. : PNMM/PC-183/E-4006/NCB ELECTRICAL DISTRIBUTION SYSTEM
SUBJECT : REPLY TO PRE-BID QUERIES : LOT 5 Dated 01.06.2021

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1.	Section :VI – 3.2.3, Design Philosophy – EOT Crane & Hoist, Clause No.		1.1	Cranes to be provided in nearest multiple of 5 Metric Tonnes considering maximum weight to be lifted. Relevant Indian/ ISO Standards to be applicable for EOT Crane . The main hook capacity of each crane shall be minimum 25% over and above the heaviest component/ equipment to be handled. 15 T and above EOT cranes shall have 5T auxiliary hoist. All statutory guidelines to be complied by the contractor/ sub-contractor.	We will consider Single Girder EOT Crane below 15 Ton Capacity & Double Girder Crane shall be considered, if required capacity is 15 Ton & Above. Please confirm. **PDIL/TFL's Reply** LSTK Contractor to note that 5 TONNES and Above EOT cranes shall be double rail runway cranes type and also to be made of Double Bridge Girder & top running which provides ease of lateral travel of crab/trolley and maintenance. **Query** For small capacity below 15 ton is generally considered Single girder crane as per TS and for heavy capacity of 15 ton or more Double girder is preferred normally. Pls review once more and confirm	5 TONNES and Above EOT cranes shall be double rail runway cranes type and also to be made of Double Bridge Girder & top running which provides ease of lateral travel of crab/trolley and maintenance. Bidder to comply.
2.	Section : VI – 3.2.2, Design Philosophy HVAC System,		1.2.3	Ventilation system for building areas: · Battery rooms (explosion proof fans with100% stand-by) · Maintenance rooms · Pantry room · All Toilets · Plant room · Clean agent room · AHU (Air Handling Units) Rooms · Locker rooms · Electrical room · Cable cellar (explosion proof fans with100% stand-by) · Store rooms · Change rooms · Chemical, oil and Bulk storage shed	Sr. No. 114, Only Battery Room shall have ventilation. Complete Substation excluding Battery Room shall be fully airconditioned as per NIT. As per Pre bid reply complete building to be air conditioned which is contradictory to TS ventilation clause no 1.2.3. pls confirm.	NIT shall prevail. Ventilation system for building areas. · Battery rooms (explosion proof fans with100% stand-by) · Pantry room · All Toilets · Plant room · Clean agent room · AHU (Air Handling Units) Rooms · Locker rooms · Cable cellar (explosion proof fans with100% stand-by) · Store rooms · Change rooms · Chemical, oil and Bulk storage shed
3.	Section:VI-3.3/Design Philosophy For Scope Of Work - Civil & Structural Work		1.0	There are three buildings and foundations in the scope: 1. Main Receiving Sub Station (MRSS) 2. OUSS 3. GIS Building with EOT crane facility 4. Foundations of all electrical equipments 5. Parking Shed 6. Any other requirement as described in Electrical section	As the MRSS & OUSS are two different substation yards, so kinldy confirm the applicability of parkinf shed at both the yards or at only one yard.	We require separate Parking Shed (of approx. Size 20 m x 10 m for MRSS and 10 m x 5 m for OUSS) for both Substation Yards (MRSS and OUSS). Amendment shall be issued.
4.	Section:VI-3.3/Design Philosophy For Scope Of Work - Civil & Structural Work		1.10	Paving (150mm thick) around major structures etc. shall be provided, if required.	Please confirm if RCC paving is required in the Substation yard.	Our understanding about RCC paving is as follows: RCC paving shall be done on entire plant area having various equipment and facilities and up to 3 m beyond that region also. (it means area should be paved in totality as a unit in and around 3 m and not in parts where equipment are placed) After that, landscaping has to be maintained. Similarly, for buildings and structures, RCC paving shall be provided up to 3 m all around. Approach roads as well as exit roads and drains are to be provided between all units and structures which shall connect with Main peripheral roads and drains(which are in Owner's scope). Amendment shall be issued.
5.	Section:VI-3.3/Design Philosophy For Scope Of Work - Civil & Structural Work		2.3	CONCRETE PAVING (WITHIN PLANT AREAS)		
6.	General			Foundation Type	We are considering only open foundations & no pile foundation, as the Soil Bearing Capacity is high enough	Noted. However, Bidder to note that soil investigation report of nearby area has been provided for reference

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					(approx. 30T/m2 at 1.5m depth) so that shallow Foundation can easily suffice & do not required pile foundation for any foundation in switchyard works. We understand that contractor is free to take the foundation type as per design, So please confirm the same	purpose only. Bidder to review and assess the soil investigation report for bidding purpose and thereafter, is free to take the foundation type as per design requirement for safe and stable foundation system. However, successful bidder shall conduct soil investigation afresh within its battery limit and shall follow the recommendation of the same for design purpose.
7.	Power Transformers Specification		6.6.8 & 6.6.9		1. 1No. 1.0 H.P pump shall be provided and installed for each transformer soak pit to evacuate oil/drain water from sump pit to nearest drain. 2. 1No. 5.0 H.P pump shall be supplied and installed for each cable trench sump pit and drain sump pit. The above mentioned items are not in our scope of supply. Please confirm.	Being a LSTK Contract, these Pumps shall be in scope of LSTK Contractor.
8.				-	OLTC shall be mounted inside the main tank. Please confirm	As per NIT. OLTC shall not be mounted inside the Main Tank.
9.	Power Transformers Specification		10.3 (c)		Short Circuit test as per clause No.10.3 c) shall not be performed. In this case we will submit higher rating test report for your reference only.	Short Circuit test as per NIT shall be carried out on one transformer (Grid Transformer only).
10.				Specification sheet for 220/34.5 kV in power transformers specification	for 150MVA Transformer – Vecto group is mentioned as Dyn11. Pelase confirm whether 220kV is delta connected winding. But in case OPTCL specification vector group shall be YNyn0.	Vector Group of Grid Transformers: YNyn0 (Tentative). However, LSTK Contractor to coordinate with OPTCL and consider Electrical System Study for finalisation of Vector Group.
11.				Winding insulation type in power transformers specification	HV is mentioned as Uniform. Please confirm whether 220kV winding is uniform insulated.	As per NIT.
12.				Guaranteed Impedance at 75 deg.C & losses in power transformers specification	Guaranteed % Impedance & Losses required to be mentioned.	Impedance: As per IS/IEC and Electrical System Study with consideration of limiting Short Circuit Current. Maximum Losses shall be provided in Amendment.
13.				Neutral Grounding Resistor (NGR)	NGR for connecting LV shall not be in our scope of supply.	NGR rating shall be as per NIT and same shall be in scope of LSTK Contractor.
14.				Termination for HV in power transformers specification	Type of HV termiantion for 220/34.5kV transformer.	To be finalised during detailed engineering.
15.				Capitalisation of losses	Please inform the Capitalisation of losses if any	Capitalisation of losses is not envisaged.
16.		317	3.2	Electrical System study for the entire fertilizer complex shall be conducted by the following: -ETAP Automation Private -Tata consulting Engineers Limited -Development Consultants private limited.	We can propose other reputed organisation company who can do complete Electrical System study. Kindly allow us to limited add more organisation	As per NIT.
17.		317	3.2	LSTK Contractor has to perform the system study keeping in view the synchronization of CPP (Future Provision) and DGs with OPTCL Grid power.	Complete details of future CPP will be required as it will affect the system study results	During detailed engineering.
18.		317	3.2	Electrical Power System Study shall be in three stages i.e. preliminary, intermediate and final along with all the necessary calculation for Owner/Consultant's approval /comments	3 (Initial + 2) Revisions will be considered for the study.	As per NIT.

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19.		317	3.2	Also, LSTK Contractor shall explain the complete ETAP Study in detail at Owner/Consultant' office up to their full satisfaction.	Bidder will explain the final report of the study in final presentation meeting. No of days of the meeting and engineers attending will be fixed. This will help in timely closure of the study project.	LSTK Contractor shall explain the complete ETAP Study in detail at Owner/Consultant' office up to their full satisfaction, at all 3 stages. .
20.		317	3.2	In case equipment is ordered before studies are completed and revision of rating or design is required as a result of study then inclusion of such revisions shall be in LSTK Contractor's scope without any cost and time implication.	3 Revisions will be considered for the study. Any revision in the equipment data/rating shall be included in the upcoming revision i.e. change in data after 1st revision will be considered in 2nd revision.	As per NIT.
21.		668	1.2	POWER SYSTEM STUDY shall also provide a list of recommendations for equipment selection and operation configuration.	Base case operation configuration to be defined by customer. Based on the results of preliminary studies change in operation configuration will be recommended, if required.	Details already provided in NIT. However, case operation configuration shall be finalised during System Study.
22.		669	2.2	The system study has to be carried out in 02 Phases.	3 Revisions are considered. 2 Revisions will be consisdered for First Phase and 1 Revision for Second Phase (Final)	Electrical Power System Study shall be in three stages i.e. preliminary, intermediate and final
23.		669	2.2	Transient stability studies	Complete details of future CPP will required.	2 x 45 MW CPP is envisaged presently.
24.		669	2.2	Adequacy of all protection functions in the complete electrical network	Bidder will provide only overcurrent and earth fault relay settings i.e. relay pickup and time delay. Please elaborate on "adequacy of all protection functions"	As per NIT.
25.		669	2.2	Also, Power system study consultant shall carry out study for the modifications of relay settings:	Need to understand "modification of relay settings". Protection relay coordination is already part of scope. Does it mean revision of relay setting in case of modification in plant connectivity?	As per NIT.
26.		670	2.2	The POWER SYSTEM STUDY's scope also includes required Data collection from various sources andverification of the collected data. May need to do site visit, if require to collect the data.	Site visit is subjected to COVID-19 Pandemic situation, Government guidelines and safety measures.	As per NIT.
27.		670	2.3.3	Motor re-acceleration studies Shall conduct a motor starting study for starting the largest motor on Normal & Emergency Bus at all Voltage levelsof each units along with its selected cable for verifying voltage drop at the motor terminals is within limit.	We understand it as static motor starting study calculating only the voltage drop at motor terminal to determine whether the selected motor cable is suitable to feed the connected motor.	As per NIT.
28.		670	2.3.4	The transient stability analysis shall be carried out to check the effects of three-phase short circuits at various locations on the operation of generators and motors in the OPTCL's power system.	Transient stability to be performed with future CPP? Only future CPP location is highlighted in conceptual MRSS SLD. Complete details of future CPP will be required.	2 x 45 MW CPP is envisaged presently.
29.		670	2.3.4	For industrial networks with a high share of motor load, the transient stability performance includes also a criterion related to the maximum fault duration after which a re-acceleration of process-essential motors.	Please elaborate criterion for motor re-acceleration w.r.t. stability.	As per NIT. During detailed engineering based upon Process requirement.
30.		671	2.3.7	The Arc Flash Hazard Analysis to be performed for all HV and LV switchboards to provide the calculated arc flash hazard of the particular equipment as installed and to provide labels for the use of maintenance personnel in determining the proper protective equipment to wear.	Soft copy of Arc Flash Hazard Labels will be provided.	As per NIT.

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31.		671	2.3.7	Shall submit Arc Flash PPE Purchase advisory report along with the Power System Study report with full Compliance of NFPA 70E and OSHA 1910 Arc Flash Regulations.	PPE and Category specifications as per NFPA 70E will be mentioned in the report. It will be the outcome of Arc Flash Hazard Analysis.	As per NIT.
32.		671	2.3.8	The Insulation coordination study shall assess the required insulation level for the 220KV, 33 kV & 11KV of all substation and to consider any route or configuration change in OHL during detailed engineering.	We presume that Insulation coordination to be done for MRSS only.	For entire fertiliser complex covering all 21 Nos. Substations.
33.		671	2.3.9	Protection relay coordination studies	Overcurrent and earth fault relay pickup and time setting will be provided in this study.	As per NIT.
34.		671	2.4	Latest versions of ETAP softwares shall be used for Electromagnetic switching transients and Neutral Earthing system study	PSCAD will be used for Electromagnetic switching transients. Ellaborate the requirements of Neutral earthing system study	As per NIT.
35.		672	2.4	As part of the report, descriptive bulletins and technical brochures shall be provided for the software used. Each calculation module of the software shall be identified and appropriate information provided.	Technical brochures and other information regarding the software available in public domain will be provided.	As per NIT.
36.		Operating Conditions/ Configuration	General Point	The list of operating condition should be provided for system study. Any constraint in a particular operating condition will be highlighted in the study report. We presume the list of operating conditions will be provided by KEC engineering team.	LSTK Contractor to provide the same.	Operating Conditions/Configuration shall be finalised during detailed engineering in line with NIT.
37.		Conceptual SLDs	General Point	Conceptual SLD provides basic network connectivity with typical feeders. However, for system study complete plant SLD is required specifying the load details, cable details etc.. We presume that this data would be provided by KEC Engineering Team.	LSTK Contractor to provide the same.	During detailed engineering.
38.	Section-VI-3.1, Power Transformers		8.3	Vector Group & Losses	1. We request you to please confirm the firm parameters of the Power transformer in order to provide best technical & competitive offer. However, in general Star-Star type ICT transformer is considered for GRID S/S. 2. Also , we request you to confirm the Losses of transformer.	Impedance: As per IS/IEC and Electrical System Study with consideration of limiting Short Circuit Current. Vector Group of Grid Transformers: YNyn0 (Tentative). However, LSTK Contractor to coordinate with OPTCL and consider Electrical System Study for finalisation of Vector Group. Efficiency of Transformers, as per NIT. Maximum Losses of Transformers shall be provided in Amendment. *This supersedes Reply to Pre-bid query Sl. No. 2 of Lot 4.*
39.				SLD (DRG NO.- PC183-7411-0985A) Sh 1 of 2	We do not envisage any sizing of 120/150MVA , 220/34.5kV Transformer at MRSS in the scope of LSTK contractor. Kindly confirm.	Impedance: As per IS/IEC and Electrical System Study with consideration of limiting Short Circuit Current. Vector Group of Grid Transformers: YNyn0 (Tentative). However, LSTK Contractor to coordinate with OPTCL and consider Electrical System Study for finalisation of Vector Group. Vector Group of all other transformers shall be finalised by

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						LSTK Contractor in line with NIT considering upstream transformers and downstream transformers. *This supersedes Reply to Pre-bid query Sl. No. 4 of Lot 4.*