



BHARAT HEAVY ELECTRICALS LIMITED  
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-4-Feb-22

CORRIGENDUM- 02

<b>PROJECT</b>	:	2x250 MW NSPCL BHILAI TPP-FGD
<b>PACKAGE</b>	:	GYPSUM DEWATERING SYSTEM (VACUUM BELT FILTER TYPE)
<b>ENQUIRY NO</b>	:	PE/PG/BLI/E-6839/2021 dated. 10.01.2022
<b>SUBJECT</b>	:	Pre Bid Replies

Type of Corrigendum			
Technical Corrigendum -	<input checked="" type="checkbox"/>	Commercial Corrigendum -	<input type="checkbox"/>

In reference to the above mentioned tender enquiry please note the following.

1. Please find the replies of Pre-bid queries in Annexure-1 (attached).

All the other terms and conditions of the tender enquiry remain unchanged. All the bidders are requested to participate accordingly.

Yours faithfully,

For and on behalf of BHEL

Vinit Kumar Verma  
Manager

PROJECT PACKAGE NSPCL BHILAI EXPANSION POWER PROJECT NSPCL BHILAI (2X250MW) GYPSUM DEWATERING SYSTEM																								
ANNEXURE-1																								
PRE-BID CLARIFICATION SCHEDULE																								
S. NO.	SECTION	CLAUSE	PAGE NO.	STATEMENT OF THE REFERRED CLAUSE	CLARIFICATION REQUIRED by DELKOR	BHEL Reply																		
1	Tendermotice_9	1.2.4	39 of 420	Gypsum purity ≥ 90%	Not applicable to DELKOR.	Bidder to refer clause 1.2.4 Sub section C1, page 39 of 528, wherein it is mentioned that the Gypsum purity is in BHEL's scope. However, the moisture content (<10%) and chloride content (<100 ppm) in the output gypsum cake is to be guaranteed by the bidder at rated capacity.																		
2	Tendermotice_9	2.1.1.5	40 of 420	Civil work of the sump shall be in BHEL scope and inputs shall be provided by the bidder. The system shall be complete with pumps, valves, instruments and accessories along with associated supports, fasteners, gaskets etc. with drive (IE3 motor). Also, bidder to include all connection bolts/nuts/washers for installation. Required instruments and any safety device shall be supplied.	Since Vacuum pumps are placed at EI 9.0 m. Kindly clarify the requirement of sump pump.	Please note that as per layout arrangement indicated in 'GA of GDW Building', pg no. 419 of 528, Vacuum pumps are placed at EI 9.0 m. In such case, seal water sump pumps are not required.																		
3	Tendermotice_9	2.1.1.3	40 of 420	Vacuum belt filters complete with Accessories including discharge chute up to the gypsum conveyor skirt board,	Belt width & skirt board inside dimension to be provided to check the feasibility of proposed arrangement & profile of chute & angle.	Same has already been mentioned at clause no. 2.1.1.3, sub section C1, page 40 of 528 of technical specification.																		
4	Tendermotice_9	2.1.1.9. ii	41 of 420	Scope of below-mentioned interconnected piping (slurry, air and water pipes) along with valves, rubber lining (wherever applicable), instruments, valves, supports, gaskets, fasteners and accessories which is non-integral to Gypsum dewatering system is limited to engineering only and supply shall be made by BHEL. Engineering includes layout & routing of pipes, preparation of isometric drawing and BOQ.	DELKOR understand that all the drawings required for the engineering shall be provided by BHEL (Drawings for valves, pumps and other requirements). Please confirm.	All input drawings shall be made available during detailed engineering of the package.																		
5	Tendermotice_9	4.4.1	48 of 420	The filtrate from each belt filter, cake washing & cloth washing shall be taken to separate receiver tank(s) as per the supplier's proven practice	Filtrate and cake washed water shall be collected in single receiver and cloth washed water shall be collected in drip tray (client scope). This is as per proven practice with the similar type of application.	Noted. The arrangement indicated in P&IDs at page no. 425 & 426 of 526 are to be followed.																		
6	Tendermotice_9	4.4.6	48 of 420	Each vacuum receiver tank(s) shall be provided with slide plate type pneumatic vacuum breaker. The plate shall be stainless steel with a min. thickness of 3 mm.	Since we are maintaining sufficient barometric height and it is enough to break the vacuum. Further DELKOR shall provide vacuum breaker valve in Vacuum line to prevent excess vacuum generation if require.	Bidder to follow Tender specification.																		
7	Tendermotice_9	4.5.6	49 of 420	All pumps shall be fitted with suction and discharge pressure gauges.	DELKOR will supply pressure gauge as per Client PID.	The P&ID provided with tender specification has to be followed. However, if the pressure gauge is required at the pump suction for reliable operation, the same shall be provided to meet system control requirement.																		
8	Tendermotice_9	4.5.8	49 of 420	Design pumps not to be damaged during reverse rotation at up to 150% of design RPM, at full discharge head in the event that a pump trips while the other operating pump remain on line.	Reverse rotation is not recommended. To have check valve, Immediately after discharge flange of pump.	The mentioned condition is for design. For routine operation, Check valve/ NRVs have to be considered as per requirement of system.																		
9	Tendermotice_9	5.8	54 of 420	CLARIFIED WATER (USED FOR CAKE WASHING) CHARACTERISTICS	Provide clarified water temperature details.	Same has been mentioned in note of Table 4, project information, page 36 of 528 of technical specification.																		
10	Tendermotice_9	10.0.D	56 of 420	Exclusion-3D Modeling	There is no 3d modeling of layout from bidder side. Bidder shall provide the basic engineering of Equipment layout with load data for the scope of supply of equipment and platforms by bidder. Rest all detail engineering of complete building by the client. The(Layout drawings) inputs to client shall be in AutoCAD format as per vendor standard. Client to confirm the same.	Bidder to follow tender technical specification. Bidder to refer cl 10.0 page 56 of 528 wherein 3D modelling has already been indicated under exclusion.																		
11	Tendermotice_9		72 of 420	PART - C -GENERAL TECHNICAL REQUIREMENTS	This spec. is applicable for main contractor & not to BHEL's sub contractors. Please confirm.	Relevant clauses shall be applicable for the bidder limited to the Gypsum Dewatering System. Any specific point may be brought to BHEL's notice.																		
12	Tendermotice_9	19.00.00	101 of 420	COLOUR CODE FOR ALL EQUIPMENTS/ PIPINGS/ PIPE SERVICES	Vendor bought out equipments shall be as per vendor standards of colour coding and painting specs?. Pl confirm	Bidder to follow Tender specification.																		
13		13.00.00	227 of 420	<table border="1"> <tr> <td colspan="2">13.00.00</td> <td>FIELD INSTRUMENTS BASED ON FIELD BUS</td> </tr> <tr> <td colspan="3">The following instruments shall be connected to DCS/PLC through fieldbus i.e. FOUNDATION Fieldbus/Profibus (As indicated concerning to IEC 61508 safety from BHEL/Client)</td> </tr> <tr> <td colspan="3">Provide transmitter for Pressure, Differential Pressure and DP based Flow / Level measurements.</td> </tr> <tr> <td>S.No.</td> <td>Function</td> <td>Resolution/Minimum Requirements</td> </tr> <tr> <td>1</td> <td>Flow of Transmitter</td> <td>FOUNDATION Fieldbus/Profibus Packaged output</td> </tr> <tr> <td>2</td> <td>Accuracy</td> <td>±0.00% of calibrated range (maximum) for calibrated range greater than 400 metres. ±0.00% of calibrated range (maximum) for calibrated range greater than 200 metres. ±0.1% of calibrated range (maximum) for calibrated range less than 400 metres.</td> </tr> </table>	13.00.00		FIELD INSTRUMENTS BASED ON FIELD BUS	The following instruments shall be connected to DCS/PLC through fieldbus i.e. FOUNDATION Fieldbus/Profibus (As indicated concerning to IEC 61508 safety from BHEL/Client)			Provide transmitter for Pressure, Differential Pressure and DP based Flow / Level measurements.			S.No.	Function	Resolution/Minimum Requirements	1	Flow of Transmitter	FOUNDATION Fieldbus/Profibus Packaged output	2	Accuracy	±0.00% of calibrated range (maximum) for calibrated range greater than 400 metres. ±0.00% of calibrated range (maximum) for calibrated range greater than 200 metres. ±0.1% of calibrated range (maximum) for calibrated range less than 400 metres.	Mentioned two protocols in technical spec Kindly clarify which protocol shall be consider for pressure, level and flow transmitters	Same has been specified at clause sl no. 3, page 216 of 528 of the technical specification.
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14	Tendermotice_9	28.00.00	116 of 420	TRAINING OF EMPLOYER'S PERSONNEL	Not applicable to DELKOR.	Training requirement have been mentioned at clause no. 2.1.2, sub section C1, page 43 of 528 of technical specification. Bidder to follow Tender specification,																		

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15		2.02.00	229 of 420	<p>2.02.00 GUIDED WAVE RADAR TYPE LEVEL TRANSMITTER</p> <table border="1"> <tr> <td>Type</td> <td>Microprocessor based 2 wire loop (loop powered), HART protocol compatible Guided wave radar transmitter.</td> </tr> <tr> <td>Principle</td> <td>TDR (Time domain reflectometry)</td> </tr> <tr> <td>Probe Type &amp; Material</td> <td>(i) Coaxial probe of SS316/316L. If required, probe shall be suitable for overfill prevention.</td> </tr> </table>	Type	Microprocessor based 2 wire loop (loop powered), HART protocol compatible Guided wave radar transmitter.	Principle	TDR (Time domain reflectometry)	Probe Type & Material	(i) Coaxial probe of SS316/316L. If required, probe shall be suitable for overfill prevention.	Mentioned two protocols in technical spec Kindly clarify which protocol shall be consider for pressure, level and flow transmitters	As mentioned at clause sl no. 3, page 216 of 528 of the technical specification, please note that PROFIBUS PA compatible transmitters shall be provided for the following type of transmitters only :- (i) Pressure Transmitters(PT) (ii) Differential Pressure Transmitters(DPT) (iii) DP based Level Transmitter (iv) DP based Flow Transmitters (v) Temperature Transmitters  All other type of transmitters viz. Guided Wave Level Transmitter, Ultrasonic Level Transmitter, etc. shall be HART protocol based as per the requirement of Technical Specification.
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Probe Type & Material	(i) Coaxial probe of SS316/316L. If required, probe shall be suitable for overfill prevention.											
16		5.00.00	318 of 420	LOCAL INSTRUMENT ENCLOSURE AND RACKS ALL Transmitters, switches etc. For FGD system and other system being provided under the contract shall be suitably grouped together and mounted inside LIE/LIR	LIE/LIR being provided for all level, pressure and flow transmitters only.	Bidder to follow Tender specification.						
17	Tendernotice_9	2.b	392 of 420	Mandatory spares list 2.b) Belt - 1 Set	DELKOR shall be supplying consumable belt.	Bidder to refer clause no.4.3.3 of sub section C1, page 47 of 528 of technical specification.						
18	Tendernotice_9	7	400 of 420	Conveyor & Silo Extraction Device	Not applicable to DELKOR.	Bidder's understanding is correct.						
19	Tendernotice_9	4.18	402 of 420	Mechanical running test shall be carried out for Vacuum Belt Filter, Vacuum Pump & Belt Filter Wash Pump. Bidder to arrange Motor for the shop test and inspection.	Running test for Vacuum pump and Belt filter wash pump will done at vendor place as per vendor standard and for Vacuum Belt filter only Mock assembly for critical components will be done.	Bidder to follow Tender specification.						
20	Tendernotice_10	II.7	88 of 108	Impeller Tip speed to be kept in range of 13-22 m/sec.	Impeller Tip speed shall be as per vendor design standard.	Bidder to follow Tender specification.						
21	Tendernotice_10	III.C	89 of 108	Complete chute work in the region of flap gates (if applicable) shall be fabricated from 20 thk TISCRAL or equivalent	flap gates are not applicable, Excluded from DELKOR scope.	Flap gate is not applicable.						
22	Tendernotice_10	III.B	89 of 108	For sealing of inspection doors labyrinth type arrangement to be provided.	For sealing of inspection doors of chute rubber gaskets shall be provided instead of labyrinth as it is static / stationary equipment. Please confirm.	The requirement mentioned in specification is minimum. However bidder may propose better solution which has to be proven during detailed engineering.						
23					Drip tray (civil work) design, Engineering and supply is in Client scope. Please confirm.	Confirmed. However, bidder to provide the input of the drip tray during detail engineering.						
24					Provide Autocad drawing of the building layout drawing.	Same shall be provided during detail engineering.						
25					Provide Interface details if any	Same shall be provided during detail engineering.						
26					Piping software and version details to be provided	Same shall be provided during detail engineering.						