



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-6-Aug-20

CORRIGENDUM- 04

PROJECT	:	1X660 MW BHUSAWAL TPP UNIT-6
PACKAGE	:	EFFLUENT TREATMENT PLANT
ENQUIRY NO	:	E-6445/2020 Dated. 02.07.2020
SUBJECT	:	PRE- BID CLARIFICATION

Type of Corrigendum			
Technical Corrigendum -	☒	Commercial Corrigendum -	☒

In reference to the above mentioned tender enquiry for **EFFLUENT TREATMENT PLANT** package

Please note the following.

1. Pre-bid clarification attached with this corrigendum shall be treated as part of NIT

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

Yours faithfully,

For and on behalf of BHEL

R P Yadav
Dy. Manager

**PRE BID CLARIFICATION FOR ETP (Enquiry No: - E-6445/2020 dated 02.07.2020) for
1X660 MW Bhusawal TPP.**

VOLUME	SECTION	CLAU SE NO.	PAGE NO.	SPECIFICATION REQUIREMENT	CLARIFICATION	REASONS FOR CLARIFICATION	BHEL Reply
II	IA	1.03.02 (V)	107 of 534	Flow Rate = 150m ³ /hr	In P&ID the Capacity is mentioned as 10m ³ /hr. Please confirm the correct/final capacity.	Capacity mismatch	Please note that the capacity of Fuel oil storage area oily waste transfer pumps shall be read as 10m ³ /hr. as indicated in P&ID.
IIA	IA	2.01.02 (V)	109 of 534	Flow Rate = 30m ³ /hr	In P&ID The capacity mentioned is 50m ³ /hr	Capacity Mismatch	Please Note that the capacity of Boiler Area Wash water transfer pumps shall be 50m ³ /hr. as indicated in P&ID.
II	IA	2.1	11 of 534	Oil Conc. at TPI outlet - 10ppm	The Inlet oil concentration is 1000ppm for Oily Wastewater Treatment. The oil to be divided in to free and emulsified oil for oil Separator design. We are considering 300 ppm as suspended oil conc.	The Oil conc. In free & suspended form shall decide the sizing of the units.	Inlet oil concentration is 1000 ppm as per technical specification for oily waste water. 50% oil can be considered as free and 50% can be considered as emulsified for designing purpose.
II	IA	9.1	14 of 534	Pipe MOC for non corrosive wastewater is ERW Carbon Steel	This MOC is also applicable for oily wastewater as this is non-corrosive effluent.	Specific details missing in Data Sheet.	Please note that waste water mainly consist of neutralized effluent and hence MOC of pipe mentioned for Neutralized effluent shall prevail.
II	IA	3.0	13 & 14 of 534	Piping & Valves	The length of piping from OWS to retention pit for treated water is required.	Details not mentioned in specification.	OWS, Retention pit for treated water, CPI sludge Sump shall be located in ETP area as indicated in P&ID, pipe routing detail shall be as per the piping layout to be developed by the bidder during detail engineering.
II	IA	3.0	13 & 14 of 534	Piping & Valves	The length of piping from OWS to CPI Sludge Sump is required	Details not mentioned in specification.	
II	IA	3.0, 9.0 (V) (a)	14 & 15 of 534	Hydrochloric Acid piping should be Rubber lined ERW carbon steel pipe to ASTM A53 Gr. B/IS-1239, Part-I, Heavy grade & Note-3 says For small diameter pipe, where rubber lining is difficult, CPVC PN 10 shall be used for hydrochloric acid. Stainless steel pipe instead of rubber lined steel	In P&ID, MOC is mentioned as carbon steel as per IS 1239Gr. Heavy. uPVC piping is recommended due to lower size diameter. Confirmation needed	Carbon steel as per MOC IS1239 is not suitable/ Rubber Lining in small diameter (25 NB) is not possible	MOC of pipe as specified in Technical specification section IA Clause 3.0 shall be applicable

				pipe shall be used for other services			
II	IA	9.0 (II)	14 & 15 of 534	For Alum Dosing Rubber lined ERW Carbon Steel pipe to ASTM 53 Gr. B/IS-1239, Part-I, heavy grade with rubber lining 3.0 mm thick as per IS 4682 Part-I. (Vide Note-1 below which says "For small diameter pipe, where rubber lining is not possible, stainless steel pipe instead of rubber lined steel pipe shall be used.	P&ID says it should be 25NB PVC Sch 10.	Confirmation for PVC pipe is needed.	MOC of pipe as specified in Technical specification section IA Clause 3.0 shall be applicable
II	IA	9.0 (III)	14 of 534	For Lime Solution Lime Slurry the pipes should be as per Lime Solution, Lime Slurry ERW Carbon Steel Pipe to ASTM 53 Gr. B/IS-1239, Part-I heavy grade.	Whereas in P&ID it is SS304 Sch.10 Please confirm the MOC.	MOC mismatch	MOC of pipe as specified in Technical specification section IA Clause 3.0 shall be applicable
II	IA	2.5 (a)	12 of 534	Motorized Gate at inlet & outlet is required	Size & MOC of Motorized Gate valve and type of valve (whereas open/close or inching operation) is required.	Details Missing	Size and MOC shall be as per supplier recommendation to suit the corrosive effluents and same shall be finalised during detail engineering
II	IA	2.5 (a)	13 & Clause 11.0 Page 17 of 534	Monorail Hoist Two (2) nos. Electrically Operated Monorail Hoists, each of 1.0 Ton safe working capacity and complete with all accessories for handling of chemicals at ground floor and first floor of Chemical House.	Monorail Beam Supply & installation Scope is of BHEL. Confirmation needed.	Details Missing	Noted, Bidder understanding is correct.
II	IA	9.0	Page 14 of 534	Pipes for Raw Raw Water, Clarified Water, Filtered	Thickness & grade of pipes for 200NB & above size is not mentioned whether it should be 6.35	Details missing	Thickness of pipes for 200NB & above size shall be considered as

				Water, Clariflocculator Sludge, Service Water, Non-corrosive waste water, sewage water, Back wash water should be as per ERWERW Carbon Steel Pipe to ASTM 53 Gr. B/IS-1239, Part-I heavy grade for pipe size up to 150 mm NB and IS-3589 for 200 mm NB and above	thick or higher and grade should be Fe 330 or Fe 410		6mm (minimum). Grade shall be taken as Fe 410.
II	IA	12	Pg.15 & 16 of 534	Design & Testing of Valves should be as per mentioned details (as per API)	Type (Screwed/Flanged / Socket Welded) & MOC of internal & external components like Gun Metal, Forged, Cast Iron, Cast Steel etc.) needed	MOC Details missing.	MOC of valves shall be as per technical specification section IA clause number 12
II	IA	9.0, (2.0)	Pg. 16 of 534	Buried pipes as per IS 10221	Size & Length (Approx.) of Buried Pipes required.	Details not available.	Please note that the Pipe Rack shall be in BHEL scope as specified in technical specification. Further regarding coating, wrapping and protection of pipe bidder to consider 25 meter pipe from each sump to pipe rack in bidder scope. The piping scope shall be as per tender specification only
II	IA	11.0	Pg. 17 of 534	Main Pipes Trestles by BHEL	Secondary Supports Scope of Sully & Installation needed.	Details not available.	
General Clarifications-							
1. The MOC of pipe from flash Mixer to clarifier is not available. Can we consider is Carbon Steel as per IS 3589, 9.5 2 thk. Gr Fe 410 or BHEL shall supply & install the RCC Hume Pipe of desired size.							Please note that waste water mainly consist of neutralized effluent and hence MOC of pipe mentioned for Neutralized effluent shall prevail for pipe from flash mixer to clarifier.
2. Quantity & Locations for manual hoist is not clear. Also it should be simple chain pulley block or it should be with trolley & to be fixed on monorail.							One number Manual Hoist for each pump house as per technical specification section III to be

		provided.
3.	Øtype Strainers are being used at various locations. MOC of internals and externals are required.	MOC of body shall be CSRL and strainer shall be SS316.
4.	In CMB there are various pipes coming into it e.g. from CT Blow down, from D M Plant neutralization pump and from N-Pit. Scope of supply E&C is in BHEL Scope. Please Confirm.	Noted, Bidder understanding is correct.
5.	Location of Acid & Alkali dosing tanks w r t the distance from CMB is required.	Location of same shall be in ETP area further it will be decided in during detail engineering
6.	Type of Level Transmitter is needed, whether it is Ultrasonic Type or Radar Type.	LT shall be of RADAR Type for Acid tanks (any conc.) all other shall be of Ultrasonic Type
7.	Maximum depth of various pits as 4.0 M (including free board) has been considered by us.	Sump depth may vary from 2.5 meter to 4.5 meter from FGL. Bidder to consider the same while selection of pumps. Actual invert level of sump shall be informed during detailed engineering.
8.	Epoxy Painting of all RCC Tank from Inside shall be by BHEL. Vendor has to paint the pipes/ items of own supply only.	Noted, Bidder understanding is correct.

VOLUME	SECTION	CLAUSE NO.	PAGE NO.	SPECIFICATION REQUIREMENT	CLARIFICATION	BHEL Reply
Vol- II Section- IIA	GENERAL TECHNICAL REQUIREMENT OF AC AND VENTILATION SYSTEM		46-53	Clause 3.5 VENTILATION PHILOSOPY FOR DIFFERENT AREA	As per tender, the split AC, Roof extractor and Exhaust fans shall be provided for battery room, switch gear room, pump house for effluent treatment plant. However as per tender scope of supply, PLC/ MCC, Battery room, switch gear room, pump house (CMB pump house) etc. are not in the bidder scope. In view of above, if these mechanical ventilation (roof extractor, axial flow	The bidder scope shall include ventilation of chemical house. The chemical house shall include MCC room (MCC part of BHEL scope) also, the size of the same shall be informed during detailed engineering.

					fans, split AC) will be in the bidder scope then please provide the sizing/dimension of each room to design/select the ventilation items.	
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CLARIFICATION	BHEL Reply
FORMAT FOR GUARANTEED AUXILIARY POWER CONSUMPTION FIGURES - SI. no 2 Clear water transfer pumps discharge given at 1500 m distance as per tender, While considering the mentioned distance head losses for the pumps will be high. So the total power consumption of all drives will exceed 65 kw (power guarantee given as per PE-TS-415-164-A001.).Please clarify	As specified in tender Clear water transfer pump discharge shall be routed to 4 locations (i.e. Ash Water Sump, CHP Dust Suppression, Service Water and Horticulture). Total Pipe Length as mentioned in specification for all this 4 location is 1500 m. For calculation of Pump Head the farthest location as per the Plot plan indicated in technical specification may be considered which is around 550 m.
FORMAT FOR GUARANTEED AUXILIARY POWER CONSUMPTION FIGURES SI.no 4 Air blowers - Kindly confirm the blower where it is for CPI sludge pit or Clariflocculator sludge pit.	Please Note that in both CPI Sludge pit (1Working and 1 Standby) and Clariflocculator sludge pit (1Working and 1 Standby) Blower is indicated. Bidder to consider 1 No. Working drive for each pit for auxiliary power consumption format.