



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-29-Jan-21

CORRIGENDUM- 03

PROJECT	:	4 X 225 MW Arun-3 HEP, Nepal
PACKAGE	:	HVAC for Hydro
ENQUIRY NO	:	PE/PG/ARN/E-6566/2020 Dated 09.12.2020
SUBJECT	:	PRE-BID CLARIFICATION + DUE DATE EXTENSION

Type of Corrigendum			
Technical Corrigendum -	☒	Commercial Corrigendum -	☒

In reference to the above mentioned tender enquiry for **HVAC for Hydro** package

Please note the following changes

1. Due date has extended from 29-Jan-21 to 09-Feb-21 @ 02:00 PM. Bid opening shall be done at 04:00 PM on the due date.
2. Refer Attached Annexure –A for BHEL Reply to Pre-Bid Queries

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

Upendra Chaudhary
Manager/BOP



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Annexure-A (BHEL Replies to Pre-Bid Queries)

Sl.No.	Description	QTY	Unit	Bidders Queries	BHEL Reply
10	Axial flow supply fans with pre and fine filter (wall mounted) complete with casing, TEFC sq cage induction motors & mounting frame, MS rain protection cowl, bird screen and all other accessories for system completeness and installation at site as per specifications and site requirement. (suitable for 415V/3-phase supply). Following fans shall have 30 mm wc static pressure.			Location of fans are required to work out the cables and panels.	Information regarding location of required fans already present in technical specification. Further to the above any other axial fan required along with electrical items, the same shall be bidders scope the same shall be decided during detail engineering.
10.1*	Capacity 7500 CMH	2	NO*		
10.2*	Capacity 6000 CMH	4	NO*		
10.3*	Capacity 4000 CMH	5	NO*		
11	Axial flow supply fans with pre filter (wall mounted) complete with casing, TEFC sq cage induction motors & mounting frame, MS rain protection cowl, bird screen and all other accessories for system completeness and installation at site as per specifications and site requirement (suitable for 415V/3-phase supply). Following fan shall have 20 mm wc static pressure.			Location of fans are required to work out the cables and panels.	Information regarding location of required fans already present in technical specification. Further to the above any other axial fan required along with electrical items, the same shall be bidders scope the same shall be decided during detail engineering.
11.1*	Capacity 6000 CMH	1	NO*		
11.2*	Capacity 4000 CMH	1	NO*		



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12	Axial flow exhaust fans (Bifurcated type, spark proof construction, wall mounted) complete with casing, flame proof motor & mounting frame, MS rain protection cowl, bird screen and all other accessories epoxy painted for system completeness and installation at site as per specifications and site requirement (suitable for 415V/3- phase supply). Following fan shall have 15 mm wc static pressure.			Location of fans are required to work out the cables and panels.	Information regarding location of required fans already present in technical specification. Further to the above any other axial fan required along with electrical items, the same shall be bidders scope the same shall be decided during detail engineering.
12.1*	Capacity 7500 CMH	1	NO*		
12.2*	Capacity 4000 CMH	2	NO*		
12.3*	Capacity 2000 CMH	5	NO*		
13	Axial flow exhaust fans (Wall mounted) complete with casing, TEFC sq cage induction motor & mounting frame, MS rain protection cowl, bird screen and all other accessories epoxy painted for system completeness and installation at site as per specifications and site requirement (suitable for 415V/3-phase supply) . Following fan shall have 10 mm wc static pressure.			Location of fans are required to work out the cables and panels.	Information regarding location of required fans already present in technical specification. Further to the above any other axial fan required along with electrical items, the same shall be bidders scope the same shall be decided during detail engineering.
13.1*	Capacity 7500 CMH	1	NO*		
13.2*	Capacity 6000 CMH	1	NO*		
13.3*	Capacity 4000 CMH	6	NO*		
13.4*	Capacity 2000 CMH	5	NO*		
10.1	LV Switchgear (panels, feeder modules, cabinet etc.) with base frame and angle/channel for floor mounting/wall mounting				



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a	Power House & Transformer Hall Switchboard-A (800A, 415V, 3PH-4 wire, Incomer power cable size - 2 RUN-1C-400 SQMM/Phase, 1RUN-1C-400 SQMM Neutral, floor mounted) with incomer & bus coupler as breaker and outgoing feeder with breaker/MCCB as applicable.	1	LOT	Please confirm the tentative length since the same is not indicated in the respective layout.	Location of switchboard and MCC/ACDB is as mentioned in Electrical Scheme for HVAC attached along with specification. Bidder to follow the same
b	Power House & Transformer Hall Switchboard-B (1000A, 415V, 3PH-4 wire, Incomer power cable size - 2 RUN-1C-400 SQMM/Phase, 1RUN-1C-400 SQMM Neutral, floor mounted) with incomer & bus coupler as breaker and outgoing feeder with breaker/MCCB as applicable.	1	LOT	Please confirm the tentative length since the same is not indicated in the respective layout.	Location of switchboard and MCC/ACDB is as mentioned in Electrical Scheme for HVAC attached along with specification. Bidder to follow the same
c*	Power House ACDB (100A, 415V, 3PH-4 wire, incomer power cable size - 3.5C-50 sq mm) incoming & outgoing feeder with MCCB.	2	NO*	Please confirm the tentative length since the same is not indicated in the respective layout.	Location of switchboard and MCC/ACDB is as mentioned in Electrical Scheme for HVAC attached along with specification. Bidder to follow the same
d	Butterfly valve house switchboard (400A, 415V, 3PH-4 Wire, Incomer Power Cable Size - 1RUN-1C-240 SQMM/Phase, 1RUN-1C-120 SQMM Neutral) with incomer, bus coupler and outgoing feeder with MCCB.	1	LOT	Please confirm the tentative length since the same is not indicated in the respective layout.	Location of switchboard and MCC/ACDB is as mentioned in Electrical Scheme for HVAC attached along with specification. Bidder to follow the same



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e	Dam site Main control building ACDB (63A, 415V, 3PH-4 wire, incomer power cable size - 3.5C-25 sq mm) incoming & outgoing feeder with MCCB.	1	NO	Please confirm the tentative length since the same is not indicated in the respective layout.	Location of switchboard and MCC/ACDB is as mentioned in Electrical Scheme for HVAC attached along with specification. Bidder to follow the same
f	Dam site Main control building ACDB (100A, 415V, 3PH-4 wire, incomer power cable size - 3.5C-50 sq mm) incoming & outgoing feeder with MCCB.	1	NO	Please confirm the tentative length since the same is not indicated in the respective layout.	Location of switchboard and MCC/ACDB is as mentioned in Electrical Scheme for HVAC attached along with specification. Bidder to follow the same
g	Dam site Auxiliary building ACDB (63A, 415V, 3PH-4 wire, incomer power cable size - 3.5C-25 sq mm) incoming & outgoing feeder with MCCB.	1	NO	Please confirm the tentative length since the same is not indicated in the respective layout.	Location of switchboard and MCC/ACDB is as mentioned in Electrical Scheme for HVAC attached along with specification. Bidder to follow the same
4	Exhaust Air Centrifugal Blowers (2X100 %) each having minimum capacity of 2,10,000 CMH and minimum static pressure of 100 mm with TEFC squirrel cage induction motor, drive pkg, bird screen, Vibration isolation pads, foundation bolts, nuts & washers, canvass connection, Non Return damper and all other accesories required for system completeness and installation at site as per specifications and site requirement, to meet exhaust air requirement of all floors of Power House including control block, Bus duct galleries, escape tunnels etc.	2	NO	As per Layout, you need the system without duct, we presume that you do not wish the Jet fans and simply the fan shall discharge the air with	Technical Specification is clear in this regard. Bidder to follow the same



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				a short length of duct, directly to the MAT.	
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B	AIR CONDITIONING SYSTEM			Bidders Queries	BHEL Reply
1	AIR COOLED DUCTABLE TYPE SPLIT UNITS consisting of outdoor unit (having compressor condenser coils with fan and motor), indoor unit (having evaporator coil, filter, fan with motor), interconnecting refrigerant piping as per site requirement & fittings with insulation, cordless remote, electrical power cord upto the nearest available point along with isolator / MCB, fixing frame for indoor and outdoor unit, drain piping up to nearest drain point, piping support, Stabilizer, etc. and all other accessories for system completeness and installation at site as per specifications and site requirement.			Please confirm the location of each type system as the capacities are worked out at your end and we are not finding the same in your various layouts.	Information regarding location of required Split AC already present in technical specification. Further to the above any other Split AC required along with electrical items, the same shall be bidders scope the same shall be decided during detail engineering.
1.1*	15 TR net capacity (415 V, 3 phase with isolation switch).	2	NO*		
1.2*	10 TR net capacity (415 V, 3 phase with isolation switch).	4	NO*		
1.3*	5 TR net capacity (415 V, 3 phase with isolation switch).	2	NO*		
2	MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc. for Air conditioning areas served with ductable Split AC of below mentioned capacities				
2.1*	2 KW	1	NO*		
2.2*	3 KW	1	NO*		
2.3*	5 KW	1	NO*		



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3	Humidifier complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings and all other accessories Air Conditioning areas served with ductable Split AC of below mentioned capacities				
3.1*	15 TR net capacity	1	NO*		
3.2*	10 TR net capacity	1	NO*		
3.3*	5 TR net capacity	1	NO*		
4	AIR COOLED NON DUCTABLE TYPE SPLIT UNITS consisting of outdoor unit (having compressor condenser coils with fan and motor), indoor unit (having evaporator coil, filter, fan with motor), interconnecting refrigerant piping as per site requirement & fittings with insulation, cordless remote, electrical power cord upto the nearest available point along with isolator / MCB, fixing frame for indoor and outdoor unit, drain piping up to nearest drain point, support for piping, Stabilizer, etc. and all other accessories for system completeness and installation at site as per specifications and site requirement (Maximum available BEE star Rating)			Please confirm the location of each type system as the capacities are worked out at your end and we are not finding the same in your various layouts.	Information regarding location of required Split AC already present in technical specification. Further to the above any other Split AC required along with electrical items, the same shall be bidders scope the same shall be decided during detail engineering.
4.1*	2.0 TR capacity (non-ductable type, 240 V, 1 phase isolation switch)	15	NO*		
4.2*	1.5 TR capacity (non-ductable type, 240 V, 1 phase isolation switch)	4	NO*		
5	Cassette AC (non ductable type) with isolation switch, i.e.e MCB of suitable rating as specified, voltage stabilizer, cabling, all supporting structure and refrigerant piping to suite actual site conditions, drain piping up to nearest drain, support for piping etc. and all other accessories for system completeness and installation at site as per specifications and site requirement.			Please confirm the location of each type system as the capacities are worked out at your end and we are not finding the same in your various layouts.	Information regarding location of required Cassette already present in technical specification. Further to the above any other Cassette AC required along with electrical items, the same shall be bidders scope the same shall be decided during detail engineering.
5.1*	4 TR actual capacity	1	NO*		



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5.2*	3 TR actual capacity	1	NO*		
5.3*	2 TR actual capacity	1	NO*		

Sl.No.	Description	QTY	Unit	Bidders Queries	BHEL Reply
8	Local Control Panels along with support structure for HVAC system for completeness of HVAC system as per tender specification	1	LOT	What is the purpose of these panel as the same type of controls are already considered in the MCC, if these are centralized local control panels then what is the purpose of providing the same , near the equipment.	Local Control panels as per specification requirement to be considered. Kindly refer point No. 18 & 19 of specific technical requirement for more clarity.
9	FIELD INSTRUMENTS like transmitter meters, gauges, switches etc. for measurement of flow, temperature, pressure, level, humidity and other instrument required for local monitoring & control etc for HVAC System along with all hook up accessories for system completeness and installation at site.	1	LOT	Difficult to worked out in details in the absence of P&ID.	Field instrument requirements are already mentioned in technical specification. Bidder to follow the same
10.8	Screened (instrumentation) Control Cables	1	LOT	Where to be used? Are these cables to be required for yours DCS/SCADA system, please clarify.	Kindly refer the Control & Instrumentation cable portion of specification regarding screened control cable usage. For scope of Cable , kindly refer Cable scope matrix in Electrical portion of specification. Further please note that, as per specification requirement integration of HVAC system with plant SCADA to be provided, so necessary software, hardware at the panel end along with cable required for the connectivity shall be provided



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11*	Fibre Optic cable from hooking up of local control panel with upper level DCS/SCADA	500	mts*	As per specification, local control panels are of conventional type then what is the purpose of using Fibre optic cables?	As per specification requirement integration of HVAC system with plant SCADA to be provided, so necessary software, hardware at the panel end along with cable required for the connectivity shall be provided
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Corrigendum