

SPECIFICATION FOR SUPPLY OF ONE NO. FAN LESS, FILL LESS, NATURAL TYPE COOLING TOWER:

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	OFFERED	DEVIATIONS	REMARKS
1.0	PURPOSE & WORKPIECE MATERIAL				
	One No. Fan less, Fill less, Natural type cooling tower consisting of FRP louvers, poly-propylene nozzles and hot dip galvanized MS structure (coated with Epoxy Primer and Poly-urethane Paint) for air compressors of GPX division.				
2.0	SPECIFICATION:				
2.1	TECHNICAL REQUIREMENTS				
2.1.1	Make	Vendor			
2.1.2	Water flow rate (minimum)	540 M ³ /Hr			
2.1.3	Water inlet temperature	40 °C			
2.1.4	Water outlet temp.	32 °C			
2.1.5	Pressure drop across nozzles	0.5 – 0.6 Kg/cm ²			
2.1.6	Design wet bulb temperature	26 °C			
2.2	SCOPE OF SUPPLY				
2.2.1	One No. Fan less, Fill less, Natural type cooling tower consisting of FRP louvers, poly-propylene nozzles and hot dip galvanized MS structure (coated with Epoxy Primer and Poly-urethane Paint) for air compressors of GPX division.	Vendor			
2.2.2	The FRP Louvers nut bolted on Hot Dip Galvanised Epoxy Primer coated & Poly-urathene painted (HDG PU Painted) heavy MS Structure with SS Nut-bolts.	Vendor			

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2.2.3	GP grade FRP louvers made in the shape of Eliminators, to reduce drift losses.	Vendor			
2.2.4	Nozzles, made out of industrial grade PP. They give an Umbrella shaped spray which act as 'ejectors' and draw air in to the cooling tower	Vendor			
2.2.5	A Monkey ladder of 500 mm width with safety Ring cage, made of galvanized steel, is provided to climb the cooling tower. 350 mm walk-way made of galvanized MS gratings is provided longitudinally on both sides of cooling tower. Each header pipe will have 250 mm wide galvanized MS grating to access nozzles.	Vendor			
2.2.6	SS fasteners of suitable sizes are to be used to join the structure of cooling tower.	Vendor			
2.2.7	Distribution sub-headers made of 'C' class GI pipes and SS 202 nipples for connecting the nozzles to avoid thread corrosion.	Vendor			
2.2.8	The design of the cooling tower should be such that, two streams each of 240 M3/Hr and 300 M3/Hr can be operated independently by operating the independent valves located at approachable height.	Vendor			
2.2.9	The Floor area available at site for installation of cooling tower is approx 5.0 X 9.0 Mtr.	Vendor			
2.2.10	All Civil work pertaining to cooling tower basin and laying of main inlet pipe line up to near the cooling tower, outlet pipe line & pumps are in the scope of BHEL. However, all the other pipelines, common headers, foundation bolts for structure etc for the cooling tower are in the scope of supplier.	Vendor			

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2.2.11	As BHEL shall use the existing sump pit and cooling water pumps , for any clarification, the supplier may visit the site after pre appointment before submission of tender.	Vendor			
2.3	QUALIFYING CONDITIONS				
2.3.1	Only those vendors who have supplied & commissioned Fan less, Fill less, Natural type cooling towers of same or higher size (as per clause 2.1) in the past and such dry type cooling towers are presently working satisfactorily for more than 1 year after commissioning, shall quote. The vendor should submit following information about company where similar dry type cooling towers have been supplied.	Vendor			
2.3.2	Name of the customers/company where similar cooling tower is installed.	Vendor			
2.3.3	Complete postal address of the customers	Vendor			
2.3.4	Year of commissioning	Vendor			
2.3.5	Application for which the cooling tower is supplied with details to be furnished.	Vendor			
2.3.6	Name, designation, phone no., fax no. e-mail address of the contact person of the customer.	Vendor			
2.4	DOCUMENTATION				
	03 Sets of following documents (hard copies) in English language should be supplied along with dry type cooling tower.				
2.4.1	General layout plan for complete supply of cooling tower unit with dimensional details and floor space required.	Vendor			

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2.4.2	Execution drawing of cooling tower basin for civil work and foundation plan with foundation details of cooling tower structure with dimensional details.	Vendor			
2.4.3	General constructional and arrangement drawings for the complete unit.	Vendor			
2.4.4	Installation, operation and maintenance manual for complete cooling tower and Hydraulic test certificate of the cooling tower.	Vendor			
2.5	PACKING				
	All items of complete cooling tower & accessories and other supplied items shall be suitably packed to avoid any damage/loss in transit.	Vendor			
2.6	GUARANTEE				
	12 months from the date of commissioning of the complete unit at BHEL, Bhopal	Vendor			
2.7	ERECTION AND COMMISSIONING				
2.7.1	Supplier shall take full responsibility for carrying out the erection and commissioning, of total package & all types of other supplied equipment, etc. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by supplier in their foundation/layout drawings. Other requirements like crane etc. will be provided by BHEL. Details of these requirements should be informed by vendor in advance.	Vendor			
2.7.2	Special tools, tackles, instruments, and other necessary items should be brought by the supplier. Schedule of Erection and commissioning shall be submitted with the offer. Free after sales services should be ensured periodically.	Vendor			

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2.8	ACCEPTANCE (Tests/Activities to be Performed by Vendor)				
2.8.1	Before dispatch, complete package shall be inspected at suppliers' works to ensure conformance to BHEL's requirement	Vendor			
2.8.2	Tests/Activities to be carried out at BHEL works while commissioning the machine	Vendor			
2.8.3	Full load test to demonstrate the flow, water temp and other relevant parameters of the equipment.	Vendor			
2.8.4	Demonstration of all features of the cooling tower and accessories to the satisfaction of BHEL for efficient and effective use of all the equipment.	Vendor			

NOTE:-

1. Vendor must submit complete information against clause no. 2.3. The offer meeting this clause would only be processed.
2. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.
3. The offer and all documents enclosed with offer should be in English language only.