


S.No.	DESCRIPTION	Requirement	Bidder's Response
01.	In house facility of CNC Deep Hole Drilling Machine Type suitable for Drilling of Tube of hole of Dia. 16.08(+0.1-0.00), of thickness 483 mm in good working condition suitable for drilling Dia 2435 Tube plates as per Drawing.	Vendor to submit machine details mentioning Make and Its Capacity meeting our requirements.	Vendor to confirm & Provide document.
2.0	Experience certificate less than 5 Years old from Enquiry opening date.	Vendor to Provide PO copy executing CNC drilling of Minimum 500 Holes of thickness Minimum 240 mm. Vendor to provide documentary proof as invoice copy/LR/Challan/end user certificate co-relating with PO copy.	Vendor to confirm & Provide document.

1. After satisfactory, fulfilment of the all the above criteria/requirement, offer shall be considered for further evaluation as per NIT and all other terms of the tender.
2. All documentary evidences along with this PQR shall be duly signed and stamped by authorized person.
3. BHEL reserves the right to verify the information submitted by the vendor. In-case any information is found to false or incorrect the offer /Purchase order shall be rejected at any stage.
4. MSME/start up exemption not given for PQR as experience sought of is already derated from actual requirement with having in house drilling facility.

025/HLP/HCM/21100		
	HEAT EXCHANGER & CONDENSER MANUFACTURING DIVISION BHEL BHOPAL	Document No.
		Document no. HCM-211-10-2024-01
Technical Specification for Drilling of Tube holes in SS-Overlaid Tube plates		

1. Scope: Drilling, tapping and chamfering and deburring of tube holes in SS-overlaid forged carbon steel tube plates. Drilling to be done on CNC deep Hole Drilling machine using BTA/Gun Drills.
2. Material of construction: SS-overlaid CS Tubeplates


Base Plate: Carbon steel forging to SA 350 Grade LF2 class 1

Overlay material: Stainless Steel, SS-304

3. Salient Details

SI No.	Identification	Unit	HP 6 (Chabra)
1	Tube Plate thickness including Overlay	mm	483 (+2.0/-0.0)
2	Tube plate diameter	Mm	2435
3	No of tube holes		5862
4	Tube hole size	Mm	16.08 (+0.10/-0.00)
5	No of Tie Rod holes	Mm	12
6	Tie Rod holes size	Mm	M20X32 Deep
7	Tube Pitch	Mm	22.23 X 60 triangular as per Detail P of Drg
8	Hole finish	Microns	3.2
9	Chamfer of tube holes both form shell side & tube side face		Yes, as per detail B & C in the Drg.
10	Tube holes & Chamfer details		AS per Drg. No 21750140572 Rev 00 Tube layout Drg. 31750140888 Rev 00.
11	Quantity	Nos	1

4. Vendor to ensure adherence to latest revisions of drawing and QAP before start of Manufacturing.
5. Protection & Dispatch: After drilling & inspection tube plate shell be protected by applying light oil based rust Preventive. Suitable Protection to be done to prevent from rain & Dust. Placing suitable wooden piece below Tube Sheet during Transportation.
6. **Inspection**
 - a. Each tube plate shell be subjected to inspection by BHEL/BHEL appointed inspection agency.
7. **Issue of the tube plate by BHEL for drilling at vendor work**
 - a. Tube plates with SS overlay and face machined condition, shall be issued by BHEL.

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- b. Each tube plate will have unique PF number as a minimum for identification & correlation with. Inspection reports.
 - c. Free issue tube plate forging shall be released with 'A' from under CEX rule - 4(5)(X).
- 8. Transportation:

Vendor to arrange to & fro transportation of tube plates.
- 9. Delivery schedule:

Delivery shall be 8 weeks after issue of tube plates from BHEL works. This includes transportation time(Both To & Fro) in final delivery. Vendor to pick material within 15 days from the date of intimation from BHEL.
- 10. Deduction rate of GST on SWARF shall be as indicated in item material description note.
- 11. Each item of PO shall be weighed (by CRX) before dispatch and this weight shall be mentioned (item wise) in store receipt Voucher (SRV).
- 12. Difference in weight of forging & drilled tube plate shall be considered as scrap. Cost of scrap shall be deducted at the prevailing rates which is presently RS 33/-per Kg.
- 13. Tube plate will be issued from HCM division after cladding. A form under CEX Rule- 4(5) (A). Tube plate would be in ready for drilling condition.
- 14. After drilling de-burring has to be done.
- 15. QAP No QAX/TH/1659 with Latest revision Shall be applicable.
- 16. Final inspection to be done by BHEL/BHEL appointed third party inspection agency, inspection fees to be borne by BHEL.
- 17. To and fro transportation is in supplier's scope.