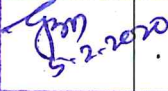
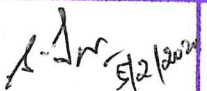
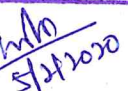
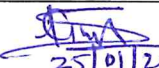
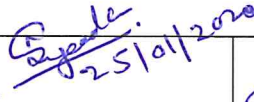
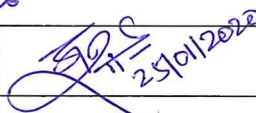


MAIN SUPPLIER'S NAME: BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL (A GOVERNMENT OF INDIA UNDERTAKING)		
NAME OF SUB-VENDOR: N/A		
NPCIL PO NO.:		
QA REF. NOs.: MAIN VENDOR: SUB VENDOR: N/A		
CUSTOMER: NUCLEAR POWER CORPORATION OF INDIA LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)		
PROJECT: 2x700MW GORAKHPUR HARYANA ANU VIDYUT PARIYOJANA (UNIT 1&2)		
EQUIPMENT: D2O HEAT EXCHANGER		
DOCUMENT NO.: BHEL / NPCIL / 30599 / SS PIPE/ CDE-20-3461		
TITLE: TECHNICAL PURCHASE SPECIFICATION FOR SS PIPES		

 न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड Nuclear Power Corporation of India Limited		
☒ अनुमोदित / APPROVED ☐ डिप्लोमी के अनुसार अनुमोदित / APPROVED AS NOTED ☐ संविधान को आगे बढ़ाएं / रोकें / PROCEED WITH/HOLD FABRICATION ☐ अंतिम ट्रांसपेरेंसी एवं प्रिंट भेजें / SEND FINAL TRANSPARENCIES & PRINTS ☐ संशोधन करें एवं अनुमोदन के लिए पुनः प्रस्तुत करें REVISE & RESUBMIT FOR APPROVAL		
जॉचकर्ता / CHECKED BY	समीक्षकर्ता/ REVIEWED BY	अनुमोदन कर्ता / APPROVED BY
 5-2-2020	 5/2/2020	 5/2/2020
किए जानेवाले कार्य का अनुमोदन आपूर्तिकर्ता संबंधी कार्य को विनिर्देशनों के अनुसार आपूर्ति करने के उत्तरदायित्व से मुक्त नहीं करता है। This approval of the work to be done does not relieve the supplier of the responsibility of supply according to specifications.		

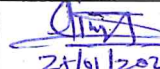
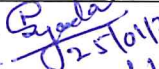
01	25.01.2020	2+3 = 5	 25/01/2020	 25/01/2020	 25/01/2020
00	23.01.2020	2+3 = 5	-SD/BSY	-SD/NS	-SD/AKM
REV NO.	DATE	PAGES	PREPARED BY	CHECKED BY	APPROVED BY

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	CONDENSER & HEAT EXCHANGER ENGG. DIVISION BHEL BHOPAL	Document No.
		BHEL / NPCIL / 30599/ SS PIPE/ CDE-20-3461
TECHNICAL PURCHASE SPECIFICATION FOR SS PIPES		

REVISION CONTROL SHEET

BHEL					
REV. No Date	PAGES	Description of Revision	Prepared By	Checked By	Approved By
00, 23.01.2020	2+3=5	Original submission.	-SD/BSY	-SD/NS	-SD/AKM
01, 25.01.2020	2+3=5	Testing Matrix Added Revision as marked.	 25/01/2020 (A. Singh)	 25/01/2020 (N. Singh)	 25/01/2020 (ASHOK MAHORE) Sr. DGM/CDE

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	CONDENSER & HEAT EXCHANGER ENGG. DIVISION BHEL BHOPAL	Document No. BHEL / NPCIL / 30599/ SS PIPE/ CDE-20-3461
TECHNICAL PURCHASE SPECIFICATION FOR SS PIPES		

1. Material specification:

- a) Material specification shall be pipes as per SA 312 TP 304L.
- b) General requirements as per SA 999.
- c) For other requirements, refer purchase Enquiry/PO. 

2. Quantity/ Size: As per enquiry / Purchase Order.

3. Tolerance: As per SA 312 TP 304L.

4. Manufacture: All Pipe shall be seamless and Cold Drawn.

5. Marking: Pipe shall be properly marked as per specification and must be correlated with the test certificates provided.

6. Testing: All pipes shall be hydro tested or NDE (i.e. UT, ET) as per SA-999.

7. Heat treatment: All pipe shall be in solution Annealed condition as per material specification.

8. Test certificate required:

-  a) Test certificate shall be in accordance with SA 312 TP 304L. Material supplied to this Specification shall conform to applicable requirements of specification SA 999 of ASME Sec.II-part A (Edition 2017).
- b) Mechanical properties & chemical composition shall be as per material specification
- c) Deleted. 
- d) Flattening test as per clause no. 11.3 of SA 312 TP 304L. 
- e) IGC test as per A 262 Practice-E. 

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9. Additional requirements:

- a) Test certificate shall be provided.
- b) Finished pipe shall be reasonably straight with smooth ends. Surface defects like any sign of cracks, lappings, pitting etc. are not acceptable. Repair by welding is not permitted.

10. Vendor List: Material meeting the technical specification requirements shall be procured from BHEL Approved Vendors only.

11. Testing Matrix: - Vendor to carry out testing and inspection in-line with testing matrix attached as Annexure-A.



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ANNEXURE-A



TESTING MATRIX						
PRODUCT	MOC	SUPPLY CONDITION	CHEMICAL (HEAT & PRODUCT)	TENSILE	IGC	FLATTENING TEST
SS PIPE	SA 312 TP 304L	AS PER CL 6.1.2 OF SA-312	AS PER TABLE-1 OF SA-312	AS PER TABLE 4 OF SA-312	AS PER ASTM A 262 PRACTICE E	AS PER 11.3 OF SA-312
						HYDRO TEST OR NDE (i.e., ET, UT)
						AS PER 22.2 OF SA-999