1. GENERAL:

1.1 This document deals with requirements for submitting offers and executing the order on placement of Purchase order / Contract for the subject item. The equipment under this specification are required for Retrofitting of on-line NDT system of seamless steel tubes being manufactured in SSTP/BHEL, having diameter between 19 and 133 mm and thickness between 2 and 12.5 mm and length between 3 and 20 meters.

1.2 Bidders have to submit the offers as below by filling in the "Vendor's response" column with relevant information against each point in the respective sections below by providing information on model no, parameters etc.

1.3 Note: A just 'CONFIRMED' or 'COMPLIED' or 'YES' or 'NO-DEVIATION' or similar words in the "Vendor's response" column is not acceptable and may lead to disqualification of the Technical Offer.

1.4 Brand and model No. of the items offered must be indicated in the offer

1.5 The offer shall Consist of Sections:

1.5.1 Part A:

a. General Requirements
b. Qualification Criteria (Ref. Para 4)
c. Technical offer
d. Commercial terms and conditions
e. Un-priced Price bid as per Part B (i.e. Price bid as per list shown in Part B of this Specification with the price value blanked)

1.5.2 Part B: Price bid for all items with split of major components:

Sl.No	Particulars	Qty	Rate
01			
02			
03			
04			
05			
06			
07			

1.6 Necessary Documents, records, drawings, catalogues as required shall also be referenced in the response column and attached with the offer.

1.7 The supplier may visit SSTP and understand the requirements before bidding.

1.8 The requirements to be met for submitting the offer and the execution of the order are laid out below.

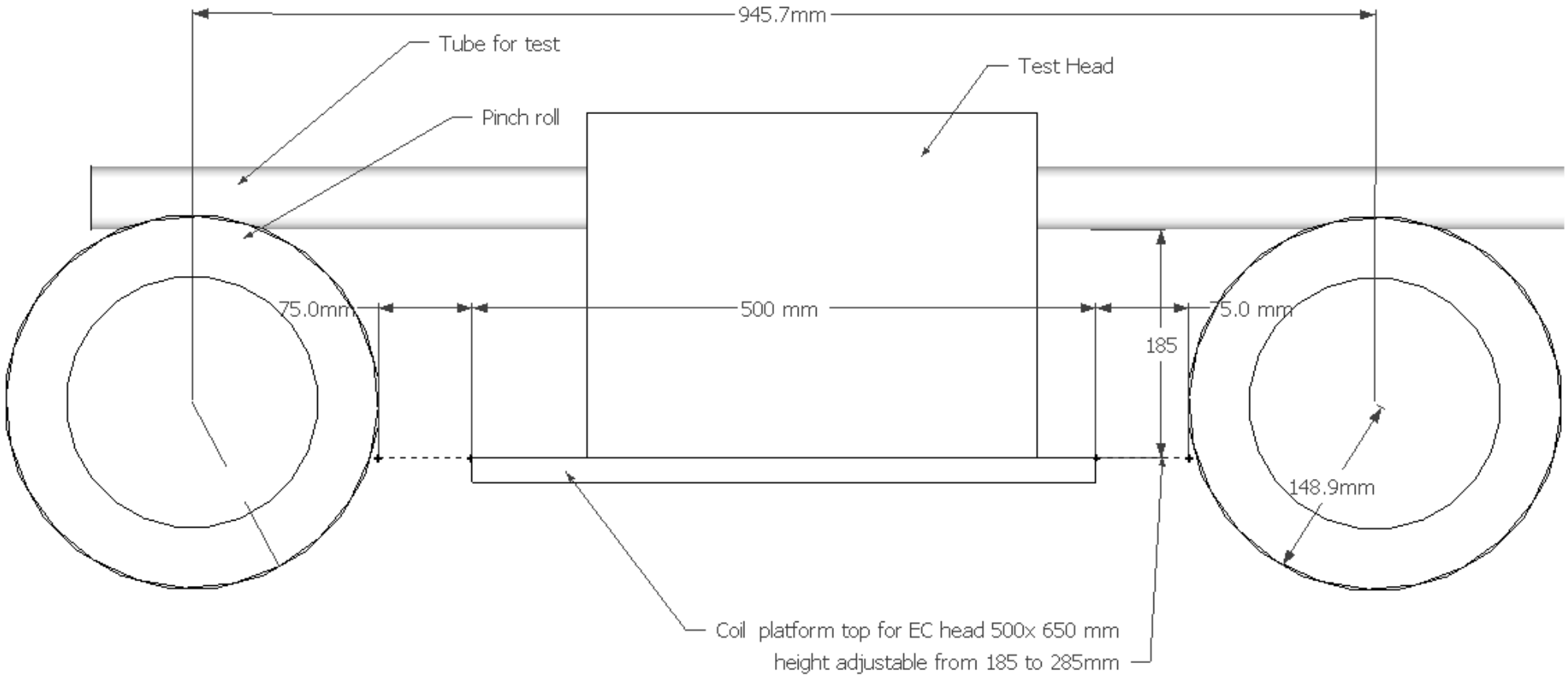
Technical Requirements:-

Sl.No	SSTP/BHEL REQUIREMENTS	Vendor's Response
2	**Job Details**	
	Seam less steel tubes manufactured will be NDE tested through on-line NDT machine. The tube travels on a conveyor with automatic rolls. The Eddy Current Tester is to be fitted on an existing test bench having up-down and cross movement perpendicular to the tube movement axis. After EC test, the tube will be ejected automatically from the conveyor to right or left depending on acceptance or rejection of the tube. and rolled down a sloping table to respective troughs.	
2.1	**Job Parameters**	
	Tube sizes : OD 19 to 133 mm. Thickness of tubes: 2 mm to 12.5 mm Length of tubes : 3 to 20 meters. Material Specification: SA 192, SA 210 Gr.A1, SA 210 Gr.C, SA 106 Gr. B, SA 106 Gr. C, SA 209 Gr.T1, SA 213 Gr.T11, SA 213 Gr.T22, SA 335 Gr.P22, A53 Gr. B, AISI 602. speed of tube travel : 1 m/s max. Rate of output: 1000 tubes per shift of 8 Hrs. (operation in 3 shifts)	
3	**Scope of supply**	
3.1	The scope of supply may essentially consist of: Test head and necessary sets of test coils for testing tubes of size range indicated above, Coil platform, Any fixturing required to mount the coil platform on the existing test bed shown in annexure A, Modification required on the existing test set up to match the offered system, Defective tube marking system, Control electrical and electronics, Computer and its interface with Software for controlling and testing	
3.2	The system shall have sufficient no. of channels for testing and analyzing the signals to establish unambiguous test result w.r.t to the reference standard used. The test frequency shall be selected from 1kHz to 5MHz and flaw band width up to 5kHz. In case of other methods the technology shall be explained in the offer with necessary inputs for evaluation of the offer.	
3.3	Controls, cables and Electronics, Acceptance, rejection sorting signals etc. with capability for Storage of calibration data and retrieval for test Setup, Net working, Multiple channeling, Multi screen display for liner and polar display, Tracking display for product position and end sensors etc to enable defect location tracking, Multiple threshold analysis with independently configurable to enable identification of different type of defect, .	

3.4	All functions and test setup parameters shall be configurable in the software and shall be accessed through the graphical user interface and shall be accessible through a computer LAN network. Test parameters, including filter, sensitivity, delivery of defective signals and threshold levels must be selectable in the Program Mode while observing the effects on the display. An unlimited number of test set-ups must be storable in the system for easy recall in the Run Mode. The system must have auto Balancing and built in self-diagnostics	
3.5	A material Grade sorter to sort material working on eddy current principle or by any other NDT method based on its chemistry in comparison to a known reference tube shall also be offered either as an integrated unit with the EC system or as a separate equipment. All technical details as applicable shall be detailed out in the offer similar to the Eddy current system.	
3.6	The hardware and software shall have necessary features for controlling the test setup, evaluating the test conditions and for data analysis and reporting of test result.	
3.7	Acceptance, Rejection signals with audible alarm and paint marking etc. with capability for storage of calibration and test data and retrieval for test setup and result analysis shall be available.	
3.8	Test and reference coils shall be of high and reliable quality. The features of the coils and other subsystems shall be well described in the offer. The coils must be guaranteed against failure or deterioration for a period of 3 years.	
3.9	Encoders shall be provided for defect location w.r.t tube length	
3.10	Demagnetizer (consisting of Power supply, AC and DC Demagnetizing coils) to remove the residual magnet from the tube after testing. Provision for running the De-magnetizer in both AC & DC concurrently and separately must be provided.	
3.11	A Gauze meter of sufficient range and quality shall be provided.	
3.12	The integration of the system in the existing NDT system shall be carried out.	
3.13	The layout and footprint area shall be described using drawings to identify space requirement and feasibility of incorporating in the existing test set up	
3.14	Operating instruction / maintenance manual to be supplied along with relevant drawings.	
3.15	Recommended spares for the smooth running of the system for minimum 2 year period shall be offered.	
3.16	Tube feed conveyor and feeding drive are not included in the scope and is available in the existing NDT system.	
4. Qualification Critera:		
4.1	The supplier shall be in the business of carrying out Design, Manufacture supply and installation of Eddy current test systems at least for 3 years.	

4.2	With respect to point 3 above, proof of performance of the offered system shall be provided in the offer based on similar systems supplied to other customers by way of certification of performance or by spot visit.	
5. General requirements:		
5.1	The schematic drawing and operational features, catalogues etc. shall be provided in the offer	
5.2	Supplier shall prepare quality plan covering major items indicating critical quality characteristics, method of measurement, reference standard, acceptance norms and submit to BHEL before starting the manufacturing activities.	
5.3	The system performance shall be checked at BHEL after installation on a set of tubes of 3 different Diameters covering the entire range of tube sizes. Test to be demonstrated for a period of at least 3 shifts continuously.	
5.4	Service shall be provided by the supplier during guarantee period and also later through AMC. The system supplied must be supported by way of spares, availability and service for a minimum period of 10 years.	
5.5	List of spares with part identification no. (Tools, Mechanical, Electrical & Electronics) to be maintained for ensuring continuous operation with least delay time shall be provided in the offer with price.	
5.6	Supply of required commissioning spares for proving the performance of the m/c at SSTP is supplier's scope	

Annexure A


945.7mm
Tube for test
Test Head
Pinch roll
75.0mm
500 mm
75.0 mm
185
148.9mm
Coil platform top for EC head 500x 650 mm
height adjustable from 185 to 285mm