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						PAGE: 01 of 09						
COPY RIGHT AND CONFIDENTIAL THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.		PURCHASE SPECIFICATION FOR NON CONTACT RADAR TYPE LEVEL TRANSMITTERS										
		REVISIONS: 00			<table border="1"> <tr> <td colspan="3" data-bbox="904 1617 1572 1745"> APPROVED BY S.K.KISAN </td> </tr> <tr> <td data-bbox="904 1745 1078 1917"> PREPARED BY SANDEEP.S </td> <td data-bbox="1078 1745 1390 1917"> ISSUED 416 </td> <td data-bbox="1390 1745 1572 1917"> DATE 12/01/2021 </td> </tr> </table>		APPROVED BY S.K.KISAN			PREPARED BY SANDEEP.S	ISSUED 416	DATE 12/01/2021
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CONTENTS

SECTION	DESCRIPTION	PAGE NO.
A	GENERAL INSTRUCTIONS TO BIDDERS	03
B	SCOPE OF SUPPLY	04
C	TECHNICAL REQUIRMENTS	05-06

SECTION- A

GENERAL INSTRUCTIONS TO BIDDERS

- 3.1 Considering possibilities of change in requirement, i.e. addition & deletion of quantities for individual project BOM at a later date after system design finalisation, the vendor must clearly quote unit price as well as lot price for all items for indisputable calculations of lot prices in case of revised quantities later.
- 3.2 In case of quantity change, unit rates shall be applicable. However in case of item change for a project, if the required model is not available in the original offer, the unit price of another model, for the same range but with features having the closest similarity to the required one, quoted elsewhere in another variant or another group, shall be applicable.
- 3.3 Although transmitter are allowed to be indigenously assembled, calibrated & certified, but considering the fact that not yet any indigenous sensors & electronics are offered, site-proven and acceptable to most customers, the sensors and electronics should preferably be procured from vendors' own principals abroad..
- 3.4 Model selection is sole responsibility of vendor with clear understanding of specification requirement. Any change in basic model & accessories during technical evaluation shall not be allowed. In case of any doubt regarding the intent of specification technically, vendor shall interact with the purchaser & get the doubts clarified well before the due date of technical bid submission to minimize the deviation from spec. & the chances of rejection. Also any doubt is there in spec. for the parameters to be offered or not then same may be offered as alternate without any ambiguity.

SECTION- B

SCOPE OF SUPPLY:

B1 Following items are required to be supplied as per Specifications enclosed Section-D.

- Non Contact Radar type level Transmitters (Apprx. Qty : 100Nos) with threaded process connection with 3" 300# SS welded flange / SS screw on flange are acceptable.
- Suitable CS counter flange along with nuts, bolts & gaskets etc for each transmitter.
- Plug and socket-01No each transmitter
- 3-Point calibration for Transmitters.

B2 OTHER REQUIREMENTS:

1. Documents to be furnished in the event of order, before manufacturing clearance/ dispatch clearance from BHEL of items:-
 - (i) Detailed BOM including all items. Data sheets / GA drawings and erection drawings / wiring diagram. These documents shall be submitted for approval, from end-user.
 - (ii) Test certificates / reports and calibration reports, for approval.
 - (iii) O & M manuals – 4 sets hardcopies (2 sets to BHEL-EDN & 2 sets with consignment to site). Also, a soft copy of O & M manual to be provided.

SECTION-C

A. TECHNICAL REQUIREMENT FOR NON CONTACT RADAR TYPE LEVEL TRANSMITTERS:

These instruments will be used for level measurement of level, having medium as Water/steam/oil at not very high pressure conditions.

- a) The Radar type level instrument shall be microprocessor based and shall use digital signal processing techniques for conditioning.
- b) Wetted part materials of the sensor shall be chemically compatible with the process media to avoid corrosion.
- c) Since medium is slurry & limestone (solid /slurry), transmitters shall be suitable for these applications.

RADAR TYPE LEVEL TRANSMITTER

- 1.1 Type : Remote, Non-Contact
- 1.2 Antenna spec's : Type— Horn ; Matl.-SS316L with PP cladded ; Seal-Silicone/Viton; Size – 3” /4”
- 1.3 Communication : Two wire 4-20 mA DC, HART protocol
- 1.4 Temperature compensation : Required
- 1.5 Power supply : 24V DC
- 1.6 Output Signal : Galvanically isolated 2 wire 4-20 mA DC with HART.
- 1.7 Accuracy (combined) : +/-0.5% of calibrated span or minimum 5mm
- 1.8 Zero & span adjustment: Continuous, tamper proof, remote as well as manual adjustability from instrument, calibration of instruments shall be possible without actual fluid available in tank.
- 1.9 Enclosure class : Weather Proof/ IP 65 metallic housing with durable corrosion resistant coating
- 1.10 Programming :Handheld Communicator & Local Keypad
- 1.11 Name plate : Suitable tag no name plate shall be engraved.
- 1.12 Load Impedance : 500 ohms at 24 volts(minimum)

- 1.13 False signal tolerance: Transmitter shall be capable of ignoring false signals from internal tanks, sumps etc. Also transmitters shall have adjustable domains circuitry.
- 1.14 Process connection : 3"/4", 150# flanged SS316 suitable for top mounting application.
- 1.15 Electrical connection : Plug & socket type.
- 1.16 Output Indicator : Min. 4 characters integral digital LCD display with integral keypad, access protect by user code.
- 1.17 Blocking Distance : 150 mm below antenna
- 1.18 Accessories : Suitable counter flanges as per instrument process connection, nuts, bolts and gaskets, canopy etc. required for installation of transmitters.
2. Design of Transmitters shall be in compliance with the Electromagnetic compatibility requirement as per EN 61326-1 (1997) and AmdtA1, class A equipment/EN50081-2 & EN 5008 1-2 & EN 50082-2 "Electromagnetic compatibility for industrial process measurement and control equipment".
3. The offered model DDL (Device Driver list) shall be registered in HART foundation, for device operable by universal HART communicator & HMS system. These HMS & HART communicator are being procured by BHEL separately. If this technicality is not met, the offer will be technically rejected.

4. Special Requirement:

3-Point calibration for Transmitters.

5. Packing :

The materials shall be properly packed to ensure that it is capable of withstanding transit risks. Following details shall be marked on packing case

- Manufacturer's name
- BHEL purchase order

- B.** Bidder shall furnish with the offer Clause-wise compliance / deviation list. This is must for evaluating the offer.