

दूरभाष :  
TELEPHONE :  
तार : बार्क-मुंबई, चेम्बूर.  
TELEGRAMS : BARC-MUMBAI, CHEMBUR.  
फेक्स संख्या : ९१-२२-२५५० ५१५१  
FAX NUMBER : 91-22-2550 5151



ट्रॉम्बे,  
मुंबई-४००.०८५.  
TROMBAY,  
MUMBAI-400 085.

भारत सरकार  
GOVERNMENT OF INDIA  
भाभा परमाणु अनुसंधान केन्द्र  
BHABHA ATOMIC RESEARCH CENTRE  
URANIUM EXTRACTION DIVISION

South Site,  
Trombay, Mumbai – 85

Ref: UED/PI.13/22/23742

Date: 11/01/2022

TENDER No: **BARC/UED/BR/21135**  
TENDER DUE DATE: **27<sup>th</sup> January, 2022**

**Sub: Fabrication, Supply and Installation of Flow and level measuring system for HF scrubber as per specification**

Dear Sir/ Madam,

Quotations are invited on behalf of Head, Uranium Extraction Division, Bhabha Atomic Research Centre, Mumbai 400085 in sealed envelope for Fabrication, Supply and Installation of Flow and level measuring system for HF scrubber as per specification. Please note that quotations received through **Registered/Speed Post of India Postal service will only be accepted**. Interested bidder may contact the undersigned for any further clarification. The quotation should clearly indicate the Tender number. The **postal address** for sending quotation is "Head, Uranium Extraction Division, Bhabha Atomic Research Centre, Trombay, Mumbai- 400085", with **tender number mentioned** on the top of envelop.

1. **Scope of Work and Quantity:** The scope of work includes the followings:

Sr no	Scope of work	Technical Specification	Quantity
1	Fabrication, Supply and Installation of Flow measuring system for HF scrubber as per specification	See Annexure A. Technical specification	2 Sets
2	Fabrication, Supply and Installation of Leval measuring system for HF scrubber as per specification		4 sets

**A. Technical Specification:**

**See attached 1. Annexure A (Technical specification and bidding qualification)**

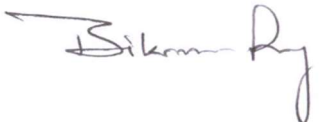
**3. Materials:** All materials for are to be purchased and used by the supplier as per install quantity. No Free Issue of Material (FIM). Welding and cutting gas and consumables will be supplied to the contractor for onsite installation only.

## **TERMS AND CONDITIONS**

**A. Note:** [Reference: (2/Misc-9/Lgl/2001/92 dated April 30, 2001, BARC)]

- I. Confidentiality: No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "Propriety" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force.
  - II. "Restricted information" categories under Section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under Section 5 of the Official Secrets Act, 1923:- Any contravention of the above – mentioned provisions by any contractor, sub-contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation.
  - III. Prohibition against use of BARC's name without permission for publicity purposes: The contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public media like Press, Radio, TV or Internet without the prior written approval of BARC.
- B. PRICE:** Offered cost should be including the entire scope of work (materials, fabrication, testing, documentation, packing & forwarding, delivery etc). Only Taxes should be quoted as extra.
- C. VALIDITY:** Price should be valid for at least 45 days.
- D. TAX:** As applicable, should be clearly indicated in the offer.
- E. Warranty:** The complete work should be warranted against any performance issue for a period of 1 year from the date of installation.
- F. JOB COMPLETION:** 40 days from the day of issue of work order.
- G. PAYMENT:** 100% including taxes after receipt of the unit at our site, successful commissioning and submission of the following documents:  
1. Delivery challan. 2. Advance Stamped Receipt. 3. Original Bill, 4. Guarantee certificate.
- J. SAFETY:** The vendor should abide by all industrial safety rules and safety instruction imposed by BARC. The vendor should not perform any unsafe work and BARC will not be responsible for any loss/damage arising due to unsafe working procedure.
- K. LABOUR DISPUTE:** The contractor should take care of all deals and disputes related to workers. BARC will not be responsible for any loss/damage/delay due to any arising labor conflict.
- J. NOTE TO THE BIDDER:** The supplier must possess valid PVC, working permit/License/Security clearance to work inside BARC premises. Party should clearly mention the tender no, due date, party's name and subject on the top of the envelope duly sealed and addressed to Head, Uranium Extraction Division BARC, Trombay, Mumbai – 400 085. Proof of prior work (PO/ work order copy) should be attached with quotation. Vendors are requested to visit the site before submitting quotation for detailed understanding of the job. For site coordination vendors may please contact Shri Bikram Roy, SO/D, 25596422

**Note: Please mention your PAN No, G.S.T. No No with the offer. Otherwise the offer is liable for rejection.**

  
वैज्ञानिक अधिकारी / Scientific Officer  
युरेनियम निष्कर्षण प्रभाग / Uranium Extraction Division  
भारत सरकार / Government of India  
भाभा परमाणु अनुसंधान केंद्र / Bhabha Atomic Research Centre  
मुंबई - 400085 / Trombay, Mumbai - 400085  
**On behalf of President of India**  
**Shri Bikram Roy**  
Scientific Officer E,  
UED, BARC  
022 2559 6422  
bikram@barc.gov.in

## Annexure A: TECHNICAL SPECIFICATION AND BOM

### A. Scope of the work:

- Design, submission and approval of technical specifications and drawings, materials for the items based on requirements as stated in this specification.
- Materials and Fabrication of the sensors and accessories.
- Inspection and testing (range, calibration, accuracy, resolution) of sensor as per technical specification at vendor's site.
- Supply of sensors and accessories to BARC, Trombay.
- Installation at plant location.
  1. Installation of **Flowmeter**: To be replaced against existing Rotameter. **8 Nos** of SS304 M16 nutbolt and washers for each meter to be provided by the supplier. All materials including Teflon gasket should be supplied and installed by the vendor.
  2. Installation of **Level transmitter**: **4 numbers** of level transmitter should be installed. . **4 Nos** of SS304 M16 nutbolt and washers for each meter to be provided by the supplier. The job involves a) Removal of level trasnmittter from panel, b) Removal of existing electrical connection, c) Installation of new trasnmittter, d) Configuration of new controller as per specification.
- Documents for installation, operation, maintenance and troubleshooting to be provided.
- Guarantee of the system

### B. Technical Specification:

#### A> Technical Specifications for Electromagnetic Flow meters ( 2 NOS)

##### Equivalent model: Khrono Optiflux 4000 with IFC signal converter

##### Process Data

Line size	: 80NB
Fluid	: <b>40 percent KOH with Fluoride Ion, Contains KF (Potassium fluoride).</b>
Operating Pressure	: Maximum 5kg/cm <sup>2</sup>
Operating Temperature	: Maximum 50° C
Flow rate (max)	: 50 cub. Met/hr

##### Electromagnetic Flow Sensor

Type	: Pulsed DC Excited EM flowmeter
Meter size	: Subject to design approval
Flow tube	: Suitable as per media
Coil housing	: Fully welded, MS
Liner	: PTFE or suitable material for fluoride media
Electrodes	: Hastalloy C, Surface polished and Self cleaning type
Grounding type	: Hastelloy C, <b>Meter will be installed in plastic pipeline.</b> Hence suitable grounding mechanism with suitable MOC to be provided.
Process connection	: 3" ANSI B16.5 Flange
Flanges MOC	: <b>Suitable material or coating to be provided for fluoride protection</b>
Area classification	: Non Hazardous
Protection class	: IP 67

## Signal Converter

Type	: REMOTE
Mounting	: REMOTE with 10 MTR Cable
Type	: Microprocessor Based
Output	: 4-20mA 2 Wire, HART + Pulse / Frequency + Status with HART
Accuracy	: $\pm 0.5\%$ of measured value
Max load	: 500 Ohms
Display	: Large back lit LCD Display
Parameters	: Actual flow rate, totalized flow (8 digit), flow direction, flow velocity, conductivity, mass flow rate (at constant density)
Diagnostics	: Empty pipe detection
Local indication	: Programmable
Power supply	: 85-250VAC
Housing	: Die cast Aluminum with Polyester top coat
Cable entry	: M20 x 1.5
Area classification	: Hazardous
Protection class	: IP 67

## **B> Technical Specifications for LEVEL Transmitter ( 4 NOS)**

### **Equivalent model: Khrone 3010**

#### **Process Data**

Fluid	: <b>40 percent KOH with Fluoride Ion, Contains KF (Potassium fluoride).</b>
Operating Pressure	: Maximum 1kg/cm <sup>2</sup>
Measurement principles	: Ultrasonic
Level measurement type	: Continuous measurement
Measured media	: Bulk solids, Granulates, Liquids, Pastes, Powders, Slurries, Solids
Measuring range (liquids)	: 0.25...5 m/ 0.82...16.4 ft
Measuring range (solids)	: 0.25...2 m/0.82...6.6 ft
Process pressure (relative)	: -0.2...2 barg/-2.9...29 psig
Process temperature	: -40...80°C/-40...176°F
Wetted parts	: Polyvinylidene fluoride (PVDF)
Process seals	: Ethylene propylene diene monomer (EPDM), Fluorocarbon-based synthetic rubber (FKM/FPM), Kalrez® 6375, PFA
Accuracy (liquids)	: $\pm 4$ mm/ $\pm 0.16$ in
Accuracy (solids)	: $\pm 4$ mm/ $\pm 0.16$ in
Approvals/Standards	: Not required
Ingress protection	: IP67
Communication	: Digital outputs HART®
Analogue outputs	: 4...20 mA in TWO wire loop configuration
Process connection	: 3" ANSI B16.5 Flange made of PVDF/EPDM