

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

Trombay
Mumbai – 85

AMC Tender no: BARC/UED/BR/22034, DUE DATE 1ST August, 2022

Ref: UED/PI.13/22/54404

Date: 19th July 2022

Sub: Enquiry on Non comprehensive Annual Maintenance contract of Gas distribution system, motor control centre, SLSR heating system, public address system

Dear Sir/ Madam,

Quotations are invited on behalf of Head, Uranium Extraction Division in sealed envelope for AMC on "Gas distribution system, motor control center, SLSR heating system, public address system". 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.

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

Sl. No.	Description	Quantity	Tentative schedule of routine visit (1 visit= Min 2 working days)	Tentative schedule of emergency visit (1 visit= Min 2 working days)
1	Gas Distribution system - RF	1 Set	8 times/ year	4 times/year
2	Gas distribution system- HF	1 set	8 times/ year	4 times/year
3	Valve control panel	3 sets	4 times/ year	2 times/year
4	Power cum control panel	1 set	4 times/ year	2 times/year
5	SLSR based cylinder heating system	1 set	4 times/ year	2 times/year
6	PA system	1 set	4 times/ year	2 times/year
7	Secondary control center/ MCC panel	15 Sets	15 times/ year	15 times/year

Scope of work:

- Zero/ Span check of electro pneumatic valve positioner
- Zero/ span check of I/P converter of electro pneumatic control valve and replacement when necessary
- Loop testing of electro pneumatic control valve a
- Loop testing of flow transmitter (DP type)
- Calibration and testing of Orifice DP flowmeter
- Configuration and testing flow controller
- Loop checking and maintenance of signal isolator
- Fitting and maintenance of globe valve E/P type
- Cleaning, maintenance of gas distribution system
- Periodic checking of system performance
- Periodic checking of control wires and termination
- Repair and replacement of wire lugs and termination when necessary
- PID loop testing of temperature controller
- PID configuration of temperature controller
- On/Off configuration of temperature controller
- Configure and test relay control board
- Periodic testing of relay control circuits
- Replacement of relays as and when necessary
- Testing of PID controller/Thyristor based heating circuit
- Configuration of thyristor power regulator
- Configuration of overload relay
- Testing of heater control and power circuit
- Testing of pH indication and sequential timer circuit
- Calibration of pH indicator with buffer solution
- Testing and power measurement of SLSR heating circuit
- Configuration of controller for SLSR heating circuit
- Replacement and installation of SLSR heating coil
- Cleaning and maintenance of Motor control center
- Periodic checking and cleaning of control panel compartment
- Testing of PA system and announcement system
- Fault diagnosis of PA system
- Repair and replacement of PA amplifier component and monitoring module
- Tuning and maintenance of PA telephone interface unit
- Loop testing and repair of PA signal distribution network across plant.

Qualification criterion for AMC engineer:

Since the AMC consists of different electrical and electronic system, containing **Instrumentation** and **control** components as well as power **actuators**, **control valve**, **controllers** of different make, the service engineer should be able to thoroughly understand the **user manuals & line diagrams** and maintenance guidelines stated by the manufacturer's design documents. Apart from documentation skill, the engineers should be able to properly diagnose the system faults and alarms and should plan the maintenance activity accordingly. Necessary site supervision will be providing by the user; however, the service engineer should take his own call on decisive steps to maintain the systems for 24/7 availability. **Following documents should be submitted along with the offer:**

1. **At least 3** purchase order/AMC on I&C systems
2. **List of manpower** with requisite qualification and **valid PVC**
3. Relevant **certification** of service engineer **from reputed institute**.

Spare list:

The supplier should provide a pricelist of spare items mentioned in the table below. The spare will be required as and when basis, i.e.- vendor has to replace spare item only if the existing item is found faulty during inspection.

Sr no	Item	Brief Technical specification
1.	Electro pneumatic valve position	Aira make valve positioner Supply- 3-10 kg/hr Input- 4-20 mA Dust and oil filter attached= yes Inlet and outlet pressure gauges- yes
2.	Electro pneumatic valve diaphragm	Aira make 250 mm diaphragm suitable for elect pneumatic globe valve
3.	Globe valve	0.5" Globe control valve for Aira make electropneumatic valve positioner. Body and wetted parts- SS 304L Test pressure – Body 30kg/sqcm hydraulic Process connection- ANSI B16.5 Flange
4.	Valve diaphragm	Diaphragm for 1" Aira make diaphragm valve Neoprene diaphragm with wire re-enforcement
5.	Flow indicator	OMRON E5AC PID controller Input- Universal Out put- 4-20mA Retransmission- Yes Configuration – 96*96mm Supply- 230VAC
6.	Signal Isolator	P&F make (or equivalent) Signal isolator cum splitter Auxiliary power supply= 230VAC Input- 4-20 mA Output- 4-20mA (dual channel isolated) Transformer isolation
7.	Control Relay	Omron SPDT icecube style relay Coil- 230 VAC Contact 5A AC
8.	3 Way manifold	Panam/ winflow make 3 Valve manifold for DP transmitter Maximum pressure= 30kg/sqcm Body/wetted parts= SS304L
9.	VFD	Delta E series VFD- 2HP Supply- 415VAC With local keypad and turn-pot
10.	Control contactor	4 Pole 20A Siemens contactor 3NO + 1NC Coil – 230VAC
11.	Add on Contactor	Add on 10A contact for Siemens contactor (NO /NC)
12.	Temperature controller	Fuji PID controller Input- Universal Output- Relay @ 5A AC Retransmission- 4-*20mA DC Configuration – 48*48mm Power supply -230 VAC
13.	SLSR Heating strip (per meter basis, minimum 50m)	Chromalox SRME 20 SLSR heat tracer Supply- 230 VAC Overjacket- No
14.	Power socket	IP 55 Male + Female power socket

		3 Pin, 230VAC configuration Make- Legrand/ equivalent
15.	Pressure gauge	Baumer/ equivalent make diaphragm type pressure gauge Range- 1000 mmwc SS304L diaphragm Dial- 150MM Bodu- SS 304L
16.	SPDT switch	Kaycee make Panel mount SPDT switch Contact 15A AC
17.	LED Indication lamp	Panel mount 230VAC LED indicaotor Diameter- 22.5mm Colour – R/Y/B
18.	Multifunction meter	Selec MFM 383A multifunction meter 3pH voltage current and energy display
19.	Hooter	230 VAC solid state hooter 96*96mm configuration
20.	Power amplifier for PA amplifier	Chicago radio/ Motwane or equivalent 250W PA amplifier triode
21.	PA speaker	Horn type 16W RMS PA speaker Chicago radio/ Motwane or equivalent
22.	Switch fuse unit	32 A 3P+N Siemens make switch fuse unit
23.	Overload relay	Siemens overload relay for 2HP/3HP/5HP DOL starter
24.	Rotary selector switch	4 pole rotary selector switch Contact rating 15A Dimension 92*92
25.	pH Indicator	Micro set make pH indicator and controller Field mountable ABS plastic body LED display 0-14 pH indication 2 Relay at 5A AC Power supply 230 VAC
26.	Weighing indicator	Penko Flex 2100 Load cell based platform weighing indicator 4-20mA out put for weight Power supply 24VDC Touchscreen display Weighing and batch controller
27.	Weighing indicator	Precia Molen DAT 500 Load cell based platform weighing indicator 4-20mA out put for weight Power supply 24VDC
28.	Pressure transmitter	0-5kg/sqcm 2 wire loop powered 4-20mA output Make- ABB/Siemens or equivalent Base accuracy ~0.01%
29.	Level transmitter	Radar level transmitter 2 wire loop powered 4-20mA output Make- Siemens/ Khrone marshal/ Vega or equivalent Range- 0-5 m
30.	Electromagnetic flowmeter	2" Electromagnetic flowmeter Make- Khrone or equivalent Auxiliary supply 230 VAC Transmitter- Integral mount Process connection- Flanged Liner- PTFE Electrode- SS316L

31.	Orifice DP flowmeter	0.5" orifice flowmeter with DP transmitter Straight length- Included MOC of straight length- SS304L Siemens make 1000mmwc DP transmitter with 3 valve manifold. Base accuracy of DP transmitter- 0.05% Output- 4-20mA in 24VDC loop
32.	Paperless recorder	Eurotherm 6180 A Digital paperless chart recorder Input- Thermocouple 16 nos Input – Analogue current (0-20 ma) 8 nos Memory card in built

Special Note:

The Workers should be based in Mumbai to accommodate the flexibility in the job schedule. Vendor should process PVC (Police Verification Certificate) for all workers. The contact details of sales/service representative at Mumbai should be mentioned in the quotation.

1. **Materials:** All materials for are to be purchased and used by the supplier as per supply and install quantity. No Free Issue of Material (FIM).

Terms and condition

1. **Service Charges:** Service Charges accepted shall be firm during the currency of the Contract.
2. **Option:**
 - a) While the contract is intended to be valid for a period of one year, this Division reserves the right to terminate this contract by giving a notice of one month and without any financial obligation on the part of this Division. In the event of cancellation of the contract for a reason or the other the payment for service carried out will be paid on pro-rata basis.
 - b) Proportionate amount shall be deducted from AMC charges for non-servicing period.
3. **Emergency Call:** Emergency/Breakdown call from the user department should be attended immediately but not later than 24 hours at no extra cost.
4. **Scope of work:**
 - a) Thorough cleaning, lubrication, testing, re-adjusting, replacement of parts needed for proper operation.
 - b) To repair defects during the currency of the contract.
 - c) To keep the equipment in upto date condition during the currency of the contract.
5. **Replacement of spare parts:** The cost of the additional spare part replaced during the currency of the contract will be paid extra at actuals. However, the parts may be replaced with approval of user department regarding the reasonableness of cost and necessity of replacement. Request for a list of common spares needed for proper working may please be intimated to user department to enable them to stock the same.
6. **Payment:**
 - a) **At the end of each AMC period (One year)**
 - b) Please forward your **invoice in triplicate** indicating the service contract number and date, for arranging payment.
 - c) 100% payment for spares will be released immediately on receipt of bill duly certified by the user department indicating the spares have been actually replaced and rates are reasonable.
7. **Bills:**
 - a) Bill and cash receipts for payment may be forwarded to the undersigned indicating our contract number for record.
 - b) Bill for spares replaced during the service contract period may please be forwarded to Head of the Division, BARC duly certified by the user department that the spares have been actually replaced and cost is reasonable.

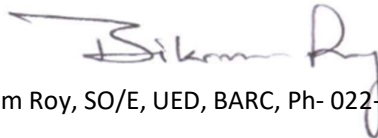
8. **Completion Report:** A completion report may please be forwarded to this Office with copy to the user department after completion of the last servicing but well before the expiry of the contract certifying that the equipment have been serviced as per the terms and conditions of the contract and also with your proposal for extension of the contract if any, indicating our contract No. and date for our consideration.
9. Please ensure that our service contract number is quoted in all correspondences and bills etc.
10. Kindly acknowledge receipt and confirm that the servicing repair will be carried out in terms of the contract.
11. Income Tax, Surcharges and Edu. Cess as applicable will be deducted from the bills.

Confidentiality Clause:

- 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 "Proprietary" 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, adviser or the employees engaged by a party with equal force.

- II. "Restricted information" categories under Section-19 of the Atomic Energy Act, 1962 and "Official Secrets" under Section-5 of the Official Secrets Act, 1923: Any contravention of the above-mentioned provision 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, 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.



Bikram Roy, SO/E, UED, BARC, Ph- 022-25596422

For and on behalf of The President of India (The Purchaser)

वैज्ञानिक अधिकारी / Scientific Officer
युरेनियम निष्कर्षण प्रभाग / Uranium Extraction Division
भारत सरकार / Government of India
भाभा परमाणु अनुसंधान केन्द्र / Bhabha Atomic Research Centre
ट्राम्बे, मुम्बई - 400085 / Trombay, Mumbai - 400085

