

# **Technical Specification & Scope of Work**

**Calibration, Functional Check of Online  
Environmental Monitors, Supply and Installation  
of Spare Parts of Draeger Make Environment  
Monitors for the Year 2026-27**

## Contents

<b>1. PREAMBLE .....</b>	<b>3</b>
<b>2. GENERAL SCOPE OF WORK.....</b>	<b>4</b>
2.1 Objective .....	4
2.2 Scope.....	4
2.3 Deviation from Tender Specifications.....	4
2.4 Bids, Specifications and Drawings.....	4
2.5 Supervision of Maintenance Work .....	5
2.6 Plant Location, Site Infrastructure: .....	5
2.7 Non – Disclosure Clause .....	5
<b>3. GENERAL CONDITIONS OF THE CONTRACT .....</b>	<b>6</b>
3.1 Bidder’s Qualification Criteria.....	6
3.2 Handling & Transport Facilities at Site/Contractors Work .....	6
3.3 Completeness of the Contract.....	7
3.4 Responsibilities of the Contractor .....	7
<b>4. DETAILS CONTRACTOR’S SCOPE OF WORK.....</b>	<b>9</b>
4.1 Detailed Scope of Contract against SI. No. 1 to 7 of SOQ .....	9
4.2 Supply, Installation of Hydrocarbon Gas Detectors against SI. No. 8 to 10 of SOQ.....	10
4.3 Terms and Conditions for Calibration and Installation .....	10

## 1. PREAMBLE

Heavy Water Board Facilities, Talcher is a constituent unit of Department of Atomic Energy, Govt. of India. The board has set up Heavy Water Plants at various locations throughout India. The tender is for Heavy Water Board Facilities, Talcher (HWBF Talcher), located at Post – Vikrampur, District – Angul, Odisha. This contract is for Annual Maintenance Contract of Instruments & Control System at Heavy Water Board Facilities Talcher for the year-2025-26

The bidder is required to quote and furnish all the technical particulars in the tender.

The tenderer should have adequate experience in execution of such jobs on comprehensive basis and all the relevant documents in support of proof of ability of the vendor should be furnished along with the tender. A format (vender information details) enclosed with the tender in this regard should be duly filled and the same should be submitted along with the tender.

The schedule of quantity mentioned in the tender document is indicative. The tenderer has to quote a complete workable system as per the indicative schedule of quantity. The tenderer must include in its quotation all such erection materials, testing, commissioning materials etc as required to make the system completely workable as per our tender specification.

The information/drawings provided in this tender document are strictly confidential and should not be copied without explicit approval from HWBF, Talcher.

Incomplete offers are liable to be rejected

## **2. GENERAL SCOPE OF WORK**

### **2.1 Objective**

The objective of this contract is to carry out periodic calibration, functional verification, performance testing and maintenance support of Dräger make online environmental monitoring systems installed at HWBF Talcher, ensuring reliable, accurate and safe operation.

Heavy Water Board Facilities, Talcher invites tenders for Calibration, functional check of online environmental monitors, supply and installation of spare parts of Draeger make Environment Monitors for the year-2026.

### **2.2 Scope**

The scope of this work covers periodic (Half yearly) Calibration, Functional and performance check, matching the reading of field devices with control room, Supply, Installation, Replacement and testing of spare parts, providing calibration Certificate and standard gas certificates of the various Draeger make environmental monitors installed at HWBF Talcher. In addition to the above the jobs mentioned as per schedule of quantity is to be executed by the contractor.

The intent is not to specify completely herein all the details of Calibration, functional check of online environmental monitors, supply and installation of spare parts of Draeger make Environment Monitors for the year-2026. However, the Calibration/installations shall confirm in all respect to high standard of engineering and workmanship and capable of performing continuous operation in a manner acceptable to the HWBF Talcher. Detailed final specifications of all the spares and calibrations shall have to be duly approved by the HWBF, Talcher.

### **2.3 Deviation from Tender Specifications**

In case of conflict between any clause of this tender specification or any clause in the offer submitted by the bidder, same shall be specifically brought out by the bidder as deviations in their offer by grouping all such details in a separate "deviation sheet".

### **2.4 Bids, Specifications and Drawings**

2.4.1 Tender quotations, duly signed, together with all supporting information and technical data as required along with supply details shall be submitted. Tenderer shall also submit a preliminary supply, Installation and calibration schedule at the time of submission of the tender quotation.

2.4.2 Any item not covered in the subject tender schedule of quantity, but required for completion of intended scope of the tender shall be specifically brought out by the bidder in his offer, failing which it will be treated as expressively agreed by the bidder that these items are included in various rates quoted for the maintenance work of the system and no extra payment shall be made.

- 2.4.3 Bidders are advised to visit the site and familiarize themselves with site conditions before submitting their tender if required. Non-familiarity with site conditions will not be considered a reason either for extra claims or for not carrying out the work in strict conformity with approved drawings and specifications.

## 2.5 Supervision of Maintenance Work

- 2.5.1 Vendor shall depute suitable authorized supervisors/engineers and technicians at site for execution of the works. Adequate supervision for safe working by contractor's personnel is to be ensured.
- 2.5.2 All safety & security rules in vogue at HWBF-Talcher site shall be complied during execution of any type of this calibration and installation work at site. After award of work, it should be the responsibility of the contractor to ensure that none of their personnel or sub-contractor's personnel loiter in the plant site and tamper with any of the existing installations.
- 2.5.3 The personnel engaged at site, should restrict themselves within the work area and should always take prior permission for moving away from the work spot. This is all the more necessary as Heavy Water Board Facilities, Talcher handles toxic and poisonous gases.

## 2.6 Plant Location, Site Infrastructure:

Heavy Water Board Facilities, Talcher is located in Angul District of Odisha and ~130 km from State capital Bhubaneswar.

Some of the particulars of the site area: -

- a) Nearest Railway Station : Talcher Station (Approx. 07 km from Plant Site)
- b) Nearest Airport : Bhubaneswar (Approx. 130 km from Plant Site)

## 2.7 Non – Disclosure Clause

- 2.7.1 The contractor against this tender shall not disclose any Departmental Information to any third party, without the prior written approval of competent authority.
- 2.7.2 The contractor (including any employee of the contractor) shall not make departmental information available to any of its employees or consultants, except on a need-to-know basis for evaluating a potential business transaction with the disclosing party, i.e., HWBF Talcher.
- 2.7.3 The contractor shall also ensure that such persons undertake obligations of confidentiality and non-disclosure, equivalent to the terms and conditions set forth herein and are required to treat departmental information in accordance with this agreement.
- 2.7.4 Furthermore, the contractor shall not disclose departmental information to any third party, including independent contractors or consultants, without the prior express written consent of the disclosing party.

### **3. GENERAL CONDITIONS OF THE CONTRACT**

#### **3.1 Bidder's Qualification Criteria**

- 3.1.1 The bidder shall have proven experience in execution of similar works involving calibration, maintenance and servicing of environmental monitoring systems/gas detection systems. Relevant work orders and satisfactory performance certificates from reputed organizations shall be furnished in support of the bidder's credentials.
- 3.1.2 The service engineers/technicians proposed to be deployed for execution of the work shall be directly employed by the OEM or OEM-authorized dealer/vendor. Deployment of personnel from third-party agencies, subcontractors or unauthorized sources shall not be permitted under any circumstances. The contractor shall submit valid proof of employment, technical qualification and training certification of the deployed personnel prior to commencement of work.
- 3.1.3 The bidder shall possess adequate technical infrastructure, tools, testing equipment and access to certified calibration gases required for execution of the contract in accordance with OEM standards and statutory requirements.
- 3.1.4 Failure to comply with any of the above qualification requirements at any stage of the tendering or contract execution shall render the bid liable for rejection and/or the contract liable for termination without any notice or compensation, at the sole discretion of HWBF Talcher.

#### **3.2 Handling & Transport Facilities at Site/Contractors Work**

- 3.2.1 The contractor shall be responsible for the handling and transportation of materials during the maintenance work from one location to another as covered under this contract. The contractor shall make his/her own arrangements for shifting materials from the site to the maintenance location and vice versa. Similarly, the contractor shall arrange for the transportation and reinstallation of the materials upon completion of the job. All such work shall be executed as per the instructions or intimation of the Engineer-in-Charge or any of his authorized representatives.
- 3.2.2 The contractor shall arrange tools/tackle (Spanner, screw driver set, pliers, tester, multimeter etc.) and any specific material/items specifically or categorically mentioned in respective serial number of the item rate BOQ/detailed scope of work
- 3.2.3 The contractor shall arrange and maintain a comprehensive list of spare required & tools to support the calibration, functional check, supply and installation contract. The contractor shall provide all necessary support to ensure the smooth functioning of the equipment and related activities.

- 3.2.4 The contractor must obtain prior permission from the competent authority before taking any item or component out of or into the user's premises during the contract period. Since HWBF Talcher is a sensitive organization under the Government of India, taking materials in or out without prior approval is strictly prohibited

### **3.3 Completeness of the Contract**

- 3.3.1 The contractor shall hand over all machines covered under the contract in fully working condition at the time of completion of the contract. All tools, tackles, issued by the department to the contractor shall be returned.
- 3.3.2 The payment for the last quarter shall be made only after the successful handover of all tools & tackles/equipment in working condition. If any defects or shortcomings are identified at the end of the contract period and the contractor is unable to rectify them, the department reserves the right to carry out the necessary repairs through other means. The actual maintenance cost incurred or the estimated cost of such maintenance (as mutually agreed with the contractor) may be deducted from the contractor's final bill.
- 3.3.3 Each running and final bill payment for items (i.e., items listed under Sr. No. 1 to 10 of the schedules of quantity) shall be made either on a part-rate or part-quantity basis, in order to ensure proportionate payment corresponding to the work completed during that period.

### **3.4 Responsibilities of the Contractor**

- 3.4.1 The contractor shall carry out calibration, functional checking and performance verification of all environmental gas detectors/online monitoring instruments strictly in accordance with the Schedule of Quantities (SOQ) and approved procedures. Such activities shall be performed on a periodic basis, at a minimum frequency of once every six (06) months, or at any additional frequency as may be directed by the Engineer-in-Charge. The contractor shall ensure that all instruments are maintained in accurate working condition at all times during the contract period.
- 3.4.2 The contractor shall be solely responsible for obtaining and maintaining valid gate passes, safety passes and work permits for all personnel deployed at site. All such passes/permits shall be arranged well in advance prior to commencement of work and shall be renewed before their expiry without any lapse. No personnel shall be permitted to enter or work at site without valid authorization and any delay arising out of non-compliance in this regard shall be entirely attributable to the contractor.
- 3.4.3 The contractor shall deploy only qualified, trained and authorized personnel for execution of the work and shall ensure strict adherence to all safety, security and statutory regulations applicable at HWBF Talcher. The contractor shall be fully responsible for the conduct and discipline of its personnel during the execution of the contract.

- 3.4.4 3.6.4 The contractor shall ensure availability of all required tools, tackles, calibration equipment and certified standard gases necessary for timely and satisfactory execution of the work. No additional claims shall be entertained on account of non-availability of resources.
- 3.4.5 The contractor shall complete all assigned activities within the stipulated time frame and in accordance with the instructions of the Engineer-in-Charge. Any delay, deficiency or non-performance shall attract penalties as per contract provisions.
- 3.4.6 The contractor shall be responsible for maintaining proper records of all calibration, testing and maintenance activities and shall submit reports, certificates and documentation as required by the department.

## **4. DETAILS CONTRACTOR'S SCOPE OF WORK**

### **4.1 Detailed Scope of Contract against Sl. No. 1 to 7 of SOQ**

The contractor shall carry out calibration and functional/performance checks of Dräger make online gas detectors, sensors and monitoring systems in accordance with approved procedures, OEM guidelines and instructions of the Engineer-in-Charge. The activities shall include, but not be limited to, the following:

- a) Cleaning of all online gas detectors, sensors and monitoring units to remove dust, contaminants or obstructions, in the presence of authorized departmental personnel.
- b) Inspection of sensor components including electrolyte levels (where applicable) and carrying out necessary topping-up or refilling strictly as per OEM recommendations.
- c) Verification of Zero and Span readings prior to calibration by application of certified standard calibration gas and recording of pre-calibration readings.
- d) Replacement of defective or worn-out spare parts, consumables, or components, as provided by the department or as directed by the Engineer-in-Charge, ensuring proper installation and compatibility.
- e) Execution of two-point calibration (Zero and Span) of all detectors/sensors/monitors using certified standard calibration gas with valid traceability, in accordance with OEM procedures.
- f) Conducting functional and performance checks after calibration by application of standard calibration gas, including recording of post-calibration readings and ensuring proper sensor response.
- g) Verification and matching of instrument readings between field-mounted detectors and corresponding control room indications and carrying out necessary corrections, adjustments, or configuration changes in case of any mismatch.
- h) Testing and verification of audio-visual alarm systems at predefined set points (A1 and A2), ensuring proper activation, indication and response as per system design.
- i) Affixing of calibration tags/labels on each instrument after successful completion of calibration and functional checks, clearly indicating calibration date, due date and relevant identification details.

All activities shall be carried out in a safe, systematic and workmanlike manner, ensuring minimal disruption to plant operations and full compliance with site safety regulations. Proper records of all calibration and testing activities shall be maintained and submitted to the Engineer-in-Charge for verification and acceptance.

#### **4.2 Supply, Installation of Hydrocarbon Gas Detectors against Sl. No. 8 to 10 of SOQ**

- 4.2.1 The contractor shall supply, install, test and commission Two (02) Hydrocarbon (HEXANE) gas detector of Dräger make, Model: Polytron 5200 CAT d A, Part No.: 8344150.

The scope shall include complete handling, transportation, installation, mounting, wiring, termination, configuration and integration with the existing monitoring/control system.

The contractor shall ensure that the supplied equipment is new, unused and conforms to OEM specifications and applicable safety standards. Post-installation, calibration (Zero and Span), functional testing and performance verification shall be carried out using certified standard calibration gas. All necessary accessories, consumables and minor modifications required for successful installation and commissioning shall be deemed to be included within the scope without any additional cost.

The work shall be considered complete only after successful installation, calibration, testing and acceptance by the Engineer-in-Charge.

- 4.2.2 The contractor shall supply, install, test and commission Two (02) Hydrogen Fluoride (HF) gas detector of Dräger make, Model: Polytron 7000 (4–20 mA HART with D+ Relay and AC Sensor), Part Nos.: 8317776 & 6810595.

The scope shall include complete installation, wiring, termination, configuration and integration with the existing system.

Post-installation, the contractor shall carry out calibration, functional checks and performance verification using certified standard calibration gas specific to HF detection. Proper operation of signal transmission, relay outputs and alarm functions shall be ensured.

All required accessories, fittings, consumables and minor site modifications shall be included within the contractor's scope without any additional cost. The work shall be deemed complete only after successful commissioning and acceptance by the Engineer-in-Charge.

- 4.2.3 The contractor shall supply Electrolyte kit of Dräger make, Model: part no. 6809381 for re-filling of electrolyte in the existing sensors as required.

#### **4.3 Terms and Conditions for Calibration and Installation**

- a) Each detector/sensor shall be calibrated at a minimum interval of once every six (06) months. The first cycle of calibration shall be completed within thirty (30) days from the

- date of commencement/clearance of work. Each detector calibration shall be considered as one unit for measurement and payment purposes.
- b) Calibration shall be carried out using a two-point method (Zero and Span) with certified standard calibration gases. The standard gases used shall have a validity of not less than six (06) months from the date of calibration.
  - c) Calibration shall be performed using target gas with 1:1 cross sensitivity in accordance with OEM guidelines. Calibration certificates for each detector/monitor/sensor shall be issued immediately upon completion of calibration and functional checks.
  - d) The contractor shall produce valid test certificates and validity certificates of all standard calibration gases at the time of execution of calibration work for verification by the Engineer-in-Charge.
  - e) Calibration shall be warranted for a minimum period of six (06) months from the date of calibration. A warranty certificate in this regard shall be submitted upon completion of calibration activities.
  - f) On-site calibration of all newly supplied and installed sensors/detectors shall be mandatorily carried out immediately after installation and commissioning.

----- **END OF THE DOCUMENT** -----