

COCHIN PORT TRUST

SECTION V- SCOPE OF WORK FOR TPIA TENDER

1. General.

The Cochin Port Trust is one of the major Ports under Ministry of Shipping, GoI. CoPT intends to procure 1 No ELL Rail mounted wharf crane of 15 Ton capacity and install it at the **Indian Coast Guard Berth at Fort Cochin**. The works of the Crane manufacturer / sub vendors are spread all over India with Mumbai as their Head quarters. The Inspection Agency shall have to attend inspection calls throughout India at suppliers/ sub-suppliers works and Testing Laboratories. As the quality of these materials and finished product of ELL inputs has a far reaching impact on ultimate products and services, CoPT takes all endeavors to ensure conformance to quality requirements through well structured quality documentation, surveillance, control and defect prevention activities by Unit/ Corporate Quality groups. CoPT proposes to select Third Party Inspection (TPI) Agency to share our endeavors for ensuring quality of inputs purchased from Crane manufacturer.

2. The detailed scope of service is furnished hereunder.

- a. Design Checking and appraisal, with reference to code of construction, specification of Ultimate user as given in Technical requirement of the equipment being supplied. The TS of the equipment is enclosed. The major works are below.
 - i. The approval of detailed General arrangement drawing with dimensions and as per Ultimate User's contract specification.
 - ii. Review of Design & stability calculation, motor power calculation, Brake selection and Electric schematic diagrams.
 - iii. Approval of the Quality Assurance Plan (QAP) submitted by the manufacturer and finalization in consultation with final approval of employer / user. The amendment in QAP if any suggested by the employer & user during execution shall also be appraised and finalized by TPIA.
 - iv. Approval of Individual applicable drive assembly drawings like hoist, luff, slew and LT.
 - v. Review of and drawings of main load carrying members including bogies, balancers, portal legs, portal beam, vertical mast, Girder, machinery frame, A- frame and all such applicable items of subject crane.
 - vi. Location & mounting arrangement of control panels.
 - vii. Material verification with mill test certificates for the physical and chemical properties of steel plates and sections if required, witnessing physical tests on specimens representing critical parts, such as wire ropes, hooks, sheaves, swivels, terminal attachments etc., witnessing proof load test of hooks and bottom blocks etc.

- viii. Approval of welding procedures and welders qualification tests.
- ix. Ensuring radiographic standards and other NDT requirements such as ultrasonic magnaflux etc are met with as per relevant codes.
- x. Ensuring heat treatment, where required, is carried out as required by relevant codes.
- xi. Inspection of Purchased and Bought -out items ordered by CoPT/ contractor from all over India (**for indigenous contracts**) at suppliers/ sub-suppliers works and identified Testing Laboratories. The inspection comprises of visual, dimensional, physical, functional, analytical, electrical, mechanical and non- destructive examination of large variety of items required for the construction of ELL Crane.
- xii. General examination during and on completion of fabrication and machining of main structural steel work to ensure good workmanship and compliance to approved plans
- xiii. Examination of all critical items and their assembly together with main items of electrical equipments including control and protection panels , break thrusters, limit switches, inverter and associated programmable logic control(PLC), transformers, cables, bus bar systems, light fittings etc.
- xiv. Witnessing the tests of electric motors, control panels etc at the manufacturer's works to ensure compliance to specification and standard and endorsing all test certificates and stamping the items inspected.
- xv. Ensuring that protection coating systems are applied in accordance with order requirements and technical specifications.
- xvi. Final inspections on completion of manufacture and shop assembly including verification of principal dimensions. All prescribed load, over load tests and functional tests of the drive, hoisting and other mechanism, mechanical apparatus and electrical equipment to be witnessed.
- xvii. Witnessing assembly and erection at Indian Coast Guard Berth at Fort Cochin site throughout the erection period together with load and functional test.
- xviii. Final stamping and certification of the crane.
- xix. Any other inspection/test as required by the purchase/work orders issued to the suppliers and as per the technical specification.
- xx. Cochin Port Trust reserves the right to alter, modify the scope of supply at their discretion and consistent with policy of the Government of India and statutory bodies under them as applicable to the contract from time to time. TPIA shall ensure the compliance of the same by the equipment supplier.

3. Probable List of drawing and Documents

Following are the list of drawing and documents which may be submitted for appraisal and certification of the TPIA. The list is only indicative and it may vary depends on the site condition.

- i. General Arrangement
- ii. Hoist Drive Assembly
- iii. Slew Drive Assembly
- iv. Luff Drive Assembly
- v. Long Travel Drive Assembly
- vi. Travelling Device
- vii. Portal Leg
- viii. Portal Beam
- ix. Vertical Mast
- x. Boom / JIB
- xi. Machinery Frame
- xii. Upper Frame
- xiii. Motor & Brake Power Calculation
- xiv. Machinery House arrangement with location & mounting of control panels
- xv. Long travel panels in portal beam
- xvi. Schematic Diagram (SLD) for Hoist, Luff, Slew & Long travel
- xvii. Stability calculation
- xviii. Wheel load calculations
- xix. Lubrication arrangement
- xx. Hook Blocks arrangement

4. Visit if equipment manufacture / sub vendor's works.

The TPIA shall visit works / lab of the manufacturer and sub vendors for witnessing the tests as per statutory requirement as directed by the employer. The TPIA shall visit the works of contractor / vendors as much frequent as required so as ensuring the quality of works / material to the desired level as per technical specification. The cost for conducting the visit shall be borne by the TPIA. The location of works of the manufacturer is at Mumbai and in Kolkata. However if required the TPIA shall conduct the visit in other locations also. However no foreign visit is included in the scope. The TPIA may be required to carry out approximately 60- 70 visits in the works of contractor / vendors for the inspection.

5. Inspection Methodology.

Inspection shall be carried out as per provision of Purchase Order and applicable inspection documents like Quality Plan, approved drawing, data -sheets and purchase specification etc. The stage inspection shall be done, if called for in Quality Plan, PO or any other applicable document at the works of main supplier or sub- supplier or Testing Laboratory. The supplier shall provide all necessary facilities for carrying out inspections, measurements & testing. The inspection agency should satisfy themselves for adequate safety at the Supplier's works. CoPT shall not be responsible for any loss/ damage on this account. In case of unsafe working conditions at the Supplier's works, the TPIA should immediately inform CoPT. The inspection agency shall ensure use of calibrated measuring instruments and equipments. The inspection agency shall verify:

- i. Material Test Certificate & traceability records to ensure use of correct material.
- ii. Supplier's internal QC records.
- iii. Compliance with process parameters as per Quality Plan.
- iv. Qualification record of equipment, process & personnel for special Processes like welding, brazing, NDE, painting & metal coating etc.
- v. Type- test certificate or any special certificate called for in the PO.
- vi. The Inspection Agency shall endorse all verified certificates with comments (Witnessed or Verified) as per applicable document. In the dimension report the dimensions checked/ witnessed shall be encircled and marked 'W'.
- vii. The Inspection Agency shall carry out visual and dimensions inspection, NDE and material testing etc, as per applicable standards & documents.
- viii. In case of non-conformance or ambiguity between Purchase specifications, Approved Drawing, Data Sheet, Quality Plan etc., inspection agency shall report Non-Conformance through Inspection Report on the date of inspection itself and intimate to CoPT.
- ix. Inspection shall be treated as complete only when final inspection report 'for acceptance' is issued after completing all stages of inspection.
- x. The accepted items shall be identified with seal and reference of seal given in the Inspection Report (IR). Location of seal shall be mentioned in the inspection report.

6. Time frame for different milestone activities.

| S.N | Particulars | Time frame |
|-----|---|--|
| 1 | Inspection of Documents such as drawing, QAP, Data sheet, specification etc, appraisal, certification / comments and issuing reports thereof | Within 10 days from the date of submission of drawing by the contractor. |
| 2 | In case of non-conformance or ambiguity between purchase specifications, and Approved Drawing, Data Sheet, Quality Plan etc., a non conformity report shall be issued | Within 48 hrs from the date of inspection of last verified document. |
| 3 | Inspection of Documents submitted by the contractor on curing the defect. | Within 3 days |
| 4 | Inspection call: Inspection call shall be raised by the employer through mail / hard copy etc. Conducting inspection at contractor's / Sub vendor's works. | Within 5 days from the date of receipt of inspection call. |
| 3 | Submission of Inspection report. The Inspection Agency shall issue report to the employer on the format provided by the employer / contractor | Within 48 hrs from the date of completion of inspection. |
| 6 | In case of non-conformance or ambiguity between purchase specifications, Approved Drawing, Data Sheet, Quality Plan etc., inspection agency shall submit Non-Conformance report through mail. | On the date of inspection itself and intimate the employer immediately. |

7. Submission of Inspection Report.

After completion of inspection, the Inspection Agency shall issue report to the employer through e mail on the format provided along with records of inspection duly signed within **48 hours**.

Subsequently the hard copy shall be sent to employer with Original signed IR, and all Quality Documents within three days from Inspection date by the TPIA without any additional charges.

8. Liquidated Damage:- Failure to comply the time frame given above shall attract liquidated damage as per Clause No 10 of SCC.