

COCHIN PORT AUTHORITY

# Willingdon Island

## Phone: 0484 2666639, 2582305, 2582307 Office of the

### Fax: 0484 2666639 Chief Mechanical Engineer

### e-mail: cme@cochinport.gov.in Cochin-682 009

No:F1/TPIA-ELL Navy/2023/M Dt:12/07/2023

**Notice Inviting Budgetary Offer (NIBO)**

Sub: **Request for budgetary offer** for the work of “Providing Third Party Inspection service for the inspection of 2nos. of rail mounted ELL cranes of 50Ton capacity for the re-construction of North Jetty at Naval Base, Kochi” **- Reg.**

Cochin Port Authority intends to appoint Third Party Inspection Agency for the Inspection of the “Design, Manufacture, Supply, Transportation, Erection, Testing and commissioning of 2Nos. Rail Mounted Electrical Level Luffing Single Jib and Double Jib Cranes of 50 Tons Capacity each, for the Re-construction of North Jetty at Naval Base, Kochi. The Inspection Agency shall have to attend inspection calls at Kroll Cranes A/S, Senawang, Malaysia. The design requirements for the 2nos. ELL cranes are attached.

The selection of TPIA will be conducted by tendering procedure through GeM and inorder to arrive at an Estimate for issuing tenders you are requested to submit your budgetary offer for the third party inspection service as mentioned above by e-mail to the address: cme@cochinport.gov.in so as to reach this office **on or before 5.00 pm on 15/07/2023.**

**CHIEF MECHANICAL ENGINEER**

**Cochin Port Authority**

**SCOPE OF WORK**

* + - 1. **General**

The **Cochin Port Authority (CoPA)** is one of the Major Ports under Ministry of Ports, Shipping and Waterways. Cochin Port Authority intends to appoint Third Party Inspection Agency for the Inspection of “Design, Manufacture, Supply, Transportation, Erection, Testing and commissioning of 2 Nos. Rail Mounted Electrical Level Luffing Single Jib and Double Jib Cranes of 50 Tons Capacity each, for the **Re-construction of North Jetty at Naval Base, Kochi**. The Inspection Agency shall have to attend inspection calls at Kroll Cranes A/S, Singapore. As the Crane and its components of the 50 Tons ELL Cranes have far reaching impact on ultimate performance and functional requirement of desired handling of loads by Indian Navy, the TPIA shall carry out Inspections as per the program furnished in the Quality Assurance Plan (QAP) submitted by the Crane Manufacturer. CoPA proposes to select Third Party Inspection (TPI) Agency for carrying out Inspection of the Cranes at various stages as per the QAP approved by the TPIA.

* + - 1. **The detailed scope of service is furnished hereunder:**

Inspection of the Cranes as per the QAP approved by TPIA shall be carried out by the TPIA appointed, at the firm’s premises. The Technical Specification and detailed Parameters of the 1 No. Double Jib ELL Crane and 1 No. Single Jib ELL Crane of 50 Ton Capacity each will be shared from M/s AFCONS Infrastructure Ltd., Mumbai, the EPC Contractor for the **Re-construction of North Jetty at Naval Base, Kochi,** to carry out Third Party Inspection by TPIA.

1. The approval of detailed General Arrangement drawing with dimensions as per the technical specifications and parameters furnished by CoPA to M/s.AFCONS Infrastructure Ltd..
2. Review of Design & stability calculations, motor power calculation, Brake selection and Electric schematic diagrams.
3. Approval of the Quality Assurance Plan (QAP) submitted by the crane manufacturer and finalization in consultation with final approval of employer / user. Amendment in QAP if any suggested by employer and user during execution shall also be appraised and finalized by TPIA.
4. Approval of individual drive applicable drive assembly drawings like hoist, luff, slew and LT Operations.
5. 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.
6. Location & mounting arrangement of control panels.
7. Material verification with mill 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.
8. Approval of welding procedures and welders qualification tests.
9. Ensuring radiographic standards and other Non Destructive Testing (NDT) requirements such as ultrasonic magna flux etc are met with as per relevant codes.
10. Ensuring heat treatment, where required, is carried out as required by relevant codes.
11. Inspection of Purchased and Bought out items ordered by the Crane Manufacturer at Abroad 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.
12. General examination during and on completion of fabrication and machining of main structural steel work to ensure good workmanship and compliance to approved plans.
13. 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.
14. 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.
15. Ensuring that protection coating systems are applied in accordance with order requirements and technical specifications.
16. Final inspections on completion of manufacture and shop assembly including verification of principal dimensions. All prescribed load, overload tests and functional tests of the drive, hoisting and other mechanism, mechanical apparatus and electrical equipment to be witnessed.
17. Witnessing assembly and erection at North Jetty, Naval Base site throughout the erection period together with load and functional test.
18. Final stamping and certification of the crane.
19. Any other inspection/ test as required by the purchase/work orders issued to the suppliers and as per the technical specification by the Crane Manufacturer.
20. Cochin Port Authority 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 Crane Manufacturer.
	* 1. **Inspection Methodology**

 Inspection shall be carried out as per Quality Assurance Plan (QAP) and the Work Order placed by M/s AFCONS Infrastructure Ltd., Mumbai, the EPC Contractor to M/s. KROLL Cranes A/S, Singapore 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 Suppliers works. CoPA 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 CoPA. The inspection agency shall ensure use of calibrated measuring instruments and equipments for inspection and approval.

* + 1. **The Third Party Inspection Agency appointed shall verify the following:**

1. Material Test Certificate & traceability records to ensure quality of the raw material used for the manufacturing of various equipments.
2. Supplier’s internal QC records.
3. Compliance with process parameters as per Quality Plan.
4. Qualification record of equipment, process & personnel for special Processes like welding, brazing, Non Destructive Evaluation (NDE), painting & metal coating etc.
5. Type test certificate or any special certificates called for in the Work Order.
6. 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’.
7. The Inspection Agency shall carry out visual dimensions inspection, Non Destructive Evaluation (NDE) and material testing etc, as per applicable standards & documents.
8. In case of non-conformance or ambiguity between purchase specification, 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 CoPA.
9. Inspection shall be treated as complete only when final inspection report ‘for acceptance’ is issued after completing all stages of inspection.
10. 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.

TERMS & CONDITIONS:-

1. The inspection charges of TPIA should be quoted in Indian Rupees only as per the Price Schedule/ BOQ format attached herewith.
2. The rate per additional visit may be also be quoted separately.
3. The rate quoted for additional visit will not be considered for evaluation purpose. At the time of actual inspection, if additional visits are necessitated, the payment for additional visits will be considered as per the necessity and certification by the Crane Manufacturer.
4. All expenses including Travelling expenses, local expenses of official(s), Accommodation of TPIA, documentation charges etc. in connection with rendering of inspection services shall be borne by the TPIA. Accordingly, the rates shall be quoted taking into account all the above.
5. The prices quoted should be firm and not subject to any change till the commissioning and handing over of the cranes at North Jetty at Naval Base.
6. Expenses for conducting all tests including specific tests if any, to be witnessed by TPIA will be borne by the Crane manufacturer.
7. Agreement: The successful TPIA is required to execute an agreement with Cochin Port as per the standard format of Cochin Port attached to this document.
8. For the sake of identification, logo of TPIA should be stamped on the equipments/items after inspection.
9. **Terms of Payment:**
	1. Fifteen Percent (15%) of contract price on approval of General Arrangement drawing and Quality Assurance plan by the employer.
	2. Twenty Five Percent (25%) on Design Appraisal up to Slew bearing and finalization of Materials certified by the TPIA for all parts of the crane and approved by employer.
	3. Twenty Five Percent (25%) on final inspection of the crane at site / pre dispatch inspection at works of manufacturer and submission of reports and approval.
	4. Twenty Five Percent (25 %) on Load testing of crane at site, certification by the TPIA and duly approved by the employer.
	5. Ten Percent (10%) of contract price shall be released on final taking over the crane by the employer and client, finalization of accounts with manufacturer of the crane etc.

# **PRICE SCHEDULE / BILL OF QUANTITIES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SLNO. | DESCRIPTION OF SERVICE | Unit  | Amount in Indian Rupees | Amount in words |
| (1) | (2) | (3) | (4) | (5) |
| 1 | Third Party Inspection charges for inspecting the crane manufacturer’s premises/ sites at Singapore for 10 to 12 times and further inspections as per the QAP approved by TPIA at North Jetty at Naval Base, Cochin, before commissioning and handing over of the cranes. | Lumpsum |  |  |
| 2 | CHARGES FOR ADDITIONAL VISITSCharges per additional visit for inspection at the Firm’s premises i.e. Kroll Cranes A/S, Singapore, if any. | 1 no. |  |  |

Signature of TPIA with seal & date

Note:- (1) The rates shall be quoted in **Indian Rupees only**.

 (2) The rates shall be quoted for Sl. No (1) and (2) of the Price Schedule above.

**Design Requirements**

|  |  |
| --- | --- |
| Operator’s eye level aboveberth | Shall be comfortable for smooth operation and full visioninside deck. |
| Wheel load maximum | 35 tones including dynamic effect (operating/storm) |
| Max. Corner Load | 275 tones including dynamic effect (operating/storm) |
| Stability Factor (min.) | 1.3 (under operating condition)1.1 (under non-operating condition when free on wheels) |
| Ambient Temperature fordesign consideration | 45 deg C (for mechanical components)50 deg C (for electrical system) |
| Humidity | Varies from 23% to 100% |
| Source of External Power supply (Incoming) | 415 V; 3phase; 50 Hz AC |
| Short circuit level atsubstation | 50 KA. |
| Permissible Voltage andFrequency variations For LT 415 V | Voltage Frequency+10% & - 10% +1% steady and 2% transient |
| Rail span | 10 M |
| Portal Height | Min. 4.5 M (For easy passage of vehicle) |
| Cable Length (m) | 300 M |
| Wind loadDesign wind velocity | The equipment shall be capable of performing all loading / unloading operations for wind up to 18 m / sec wind velocity.The equipment structure shall be stable, free on wheels during wind pressures corresponding to basic wind velocity of up to 24 m/sec as per IS 875 Part III.However, anchoring device and suitable anchor points on the equipment are to be provided, as stand-by for holding the equipment during storm condition and basic wind velocity up to 39 m/sec. |
| **Drives**  | **Type** | **Speeds** |
| Hoisting & lowering | AC- Sq. Cage Motor with VVVF drive controls. |  Hook 20T= 20 m/minHook 50T= 10 m/min |
| Slew motion | AC- Sq. Cage Motor with VVVF drive controls. | 0-0.5 RPM |
| Boom luffing | Screw / Wire rope system | 0-20 m/min |
| Gantry travel | AC- Sq. Cage Motor with VVVF drive controls. | 0-30 /min |

**For Single Jib ELL crane:**

|  |  |
| --- | --- |
| Quantity | 1 No. |
| Materials to be handled | ELL crane suitable for handling machine parts, equipment’s for maintenance of vessels and related operations, general cargo supplies to the vessels. |
| Minimum working radius | 9 to 15m |
| Maximum Outreach | Not less than 35m |
| Lifting capacity between any range of 9 to 15m radius | 50T |
| Minimum lifting capacity @ 35m radius (maximum outreach) | 20T |
| Overall height restriction of ELL crane from CD in parkingposition | 47.802m |
| Overall height restriction from CD when in operation | 47.802m |
| Height of lift at minimumoutreach of 9-15m radius | Not less than 35m |
| Height of lift at outreach of 25m | Not less than 25m |
| Height of lift @ maximum outreach of 35m | Not less than 14m |
| Height of lift below deck level | Not less that (-)15m |
| Rail span | 10m |
| Portal clearance | 4.5m |
| Rail size | CR 100 |
| Height of Crane | The maximum height of the cranes during parking position shall be limited to 47.22 m above Mean Sea Level / 47.802 above Port Chart Datum. |

 \*The above specifications are the minimum requirements.

# **For Double Jib ELL crane:**

|  |  |
| --- | --- |
| Quantity | 1 No. |
| Materials to be handled | ELL crane suitable for handling machine parts and equipment’s for maintenance of vessels and related operations. |
| Minimum working radius | 9 to 17m |
| Maximum Outreach | Not less than 35m |
| Lifting capacity between any range of 9 to 17m radius | 50T |
| Minimum lifting capacity @ 35m radius (maximum outreach) | 20T |
| Overall height restriction of ELL crane from CD in parking position | 47.802m |
| Overall height restriction fromCD when in operation | 47.802m |
| Height of lift at minimum outreach of 9-17m radius | Not less than 22m |
| Height of lift @ maximum outreach of 35m | Not less than 22m |
| Height of lift below deck level | Not less that (-)15m |
| Rail span | 10m |
| Portal clearance | 4.5m |
| Rail size | CR 100 |
| Height of Crane | The maximum height of the cranes during parking position shall be limited to 47.22 m above Mean Sea Level / 47.802 above Port Chart Datum. |

 \*The above specifications are the minimum requirements