

## SECTION III

### COCHIN PORT TRUST

#### MECHANICAL ENGINEERING DEPARTMENT

Tender No: F2/T-1/O&M Contract- GoI/2020-M

#### 2. SPECIAL CONDITIONS OF CONTRACT

##### 1. Introduction

Special Conditions shall be read in conjunction with the General Conditions of Contract, Specifications, Drawings and any other document forming part of this Contract wherever the context so requires.

Notwithstanding the Sub-division of the documents into these separate section and volume every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the Contract so far as it may be practicable to do so.

Where any portion of the General Conditions of Contract is repugnant to or at variance with any provision of the Special Conditions, the provisions of the Special Conditions shall be deemed to over-ride the provisions of the General Conditions of Contract and shall to the extent of such repugnancy of variations, prevail.

- 1.1. The Contract shall initially be valid for a period of One (1) year and may be extended for further period based on satisfactory performance and with mutual consent, as per the same rates, terms and conditions.
- 1.2. CoPT/GoI reserves the right to terminate the contract by serving one month's notice if the services of the contractor are not found satisfactory. The Contractor may also ask for the same by giving one month's notice but he has to provide the facility for operation & maintenance of ELL crane, ElectricalSystem,D.G.Set and Fire Alarm System till the next agency is engaged.
- 1.3. The persons to be deployed by the Contractor should be properly trained, have requisite experience and skills for carrying out a wide variety of operation & maintenance of ELL crane, Electrical System, D.G. Set and Fire Alarm System using appropriate materials and tools/equipments separately or collectively.
- 1.4. The contractor will arrange all items needed for his staff viz consumables, tools, machines & equipments, PPE and safety materials.
- 1.5. COPT/GOI will provide space for storing materials, equipment etc. to the Contractor in the premises. The contractor will maintain a record of the stores which shall be opened to inspection by COPT/GOI.
- 1.6. The Contractor should ensure the Health and safety measures of the employees. The Contractor should also conduct health check-up of the staff deployed before deployment as well as at regular intervals of not exceeding three months, thereafter.
- 1.7. The employees engaged by the contractor shall be covered under PF, ESI, personnel Insurance etc
- 1.8. The Contractor will be responsible for supply / installation / refilling / maintenance of all consumables, items and equipments except for major items covering under defect liability obligation of OEM / Project contractor.
- 1.9. The Contractor must employ adult and skilled labour only. Employment of child labour will lead to the termination of the contract and necessary action under Indian Penal Code.
- 1.10. The Contractor shall engage only such workers, whose antecedents have been thoroughly verified, including their character . Police verification and other formalities shall be completed before

deployment. The Contractor shall be fully responsible for the conduct of his staff.

- 1.11. The workmen deployed by the contractor are strictly banned from use of any kind of Narcotics drugs / Alcohol / smoking etc. at site and any illegal activity by the work men should be reported to Engineer without delay and the contractor shall remove such persons from the work site forthwith.
- 1.12. CoPT/GoI shall not be responsible for providing residential accommodation to any of the employee of the contractor.
- 1.13. Workers above 65 years of age and below 18 years of age shall not be deployed by the contractor. All labour, skilled or unskilled shall be provided by the contractor. Settling any dispute with the labour, labour union, any Outside union, subcontractor will be contractor's responsibility. Loss of day in this regard should not be claimed for any hindrance at site. The workers engaged for works should have sufficient knowledge and experience in the respective fields. This shall be proved to the Engineer. The Owner may at any time request the contractor to remove from the Work/Site contractor's / subcontractor's supervisor or any other authorized representative including any employee of the Contractor or his Sub-contractor(s) or any person(s) deployed by Contractor for professional incompetence or negligence or for being deployed for work for which he is not suited.
- 1.14. For all intents and purposes, the contracting agency shall be the "Employer" within the meaning of different Labour Legislations in respect of manpower so employed and deployed in COPT/GOI. The persons deployed by the agency in COPT/GOI shall not have claims of any Master and Servant relationship against COPT/GOI.
- 1.15. CoPT/GoI shall not be under any obligation for providing employment to any of the worker of the contractor after the expiry of the contract.
- 1.16. CoPT/GoI does not recognize any employee-employer relationship with any of the workers of the contractor.
- 1.17. The contracting agency shall also be liable for depositing all taxes, levies, Cess etc. on account of service rendered by it to COPT/GOI to concerned tax collection authorities from time to time as per extant rules and regulations on the matter.
- 1.18. The CoPT shall reimburse the GST remitted by the contractor while releasing the running bill of the contractor. No other taxes, cess etc shall be borne by CoPT/ GoI.
- 1.19. In case, the contractor fails to comply with any statutory/ taxation liability under appropriate law, and as a result there of the COPT/GOI is put to any loss/obligation, monetary or otherwise, the COPT/GOI will deduct the same from the monthly bills and or the Security Deposit of the agency, to the extent of the loss or obligation in monetary terms.
- 1.20. It will be the responsibility of the contracting agency to meet transportation, food, medical and any other requirements in respect of the persons deployed and COPT/GOI will have no liabilities in this regard.
- 1.21. The contracting agency shall be solely responsible for the redressal of grievances/ resolution of disputes relating to person deployed. COPT/GOI shall, in no way, be responsible for settlement of such issues whatsoever.
- 1.22. CoPT /GoI shall not be responsible for any financial or other injury to any person deployed by service providing agency in the course of their performing the functions/duties, or for payment towards any compensation.
- 1.23. The Contractor at all times should indemnify COPT/GOI against all claims, damages or compensation under the provisions of Payment of Wages Act, 1936, Minimum Wages Act 1948, Employer's Liability Act 1938, the Workmen Compensation Act 1923, Industrial Disputes Act 1947, Maternity Benefit Act 1961, Payment of Bonus Act, 1965 or any other law relating thereto and rules made there under from time to time. COPT/GOI will not own any responsibility in this regard.

- 1.24. The persons deployed by the contracting agency shall not claim nor shall be entitled to pay, perks and other facilities admissible to regular/confirmed employees of the COPT/GOI during the currency or after expiry of the contract.
- 1.25. The tenderer should quote manpower charges in Financial Bid strictly in accordance with the minimum wages as decided by the State / Central Government . If the rates quoted are found to be below the minimum wages, tender will be rejected. Under any circumstances whatsoever, the manpower deployed shall not be paid wages below the Minimum wages declared by the Govt.
- 1.26. **The rates quoted by the bidder shall remain unchanged during the period of contract.**
- 1.27. The tenderer shall pay at least the minimum bonus to the staff deployed in accordance with the Payment of Bonus Act, 1965 irrespective of the profitability or otherwise of the tenderers' business. The component of bonus paid on annual basis to the staff deployed and proof of the same must be submitted to the CoPT / GoI failing which the amount due to the employees as minimum bonus may be recovered from the performance security deposit.
- 1.28. In case of breach of any terms and conditions attached to the contract, the Performance Security Deposit of the Contractor will be liable to be forfeited by COPT/GOI besides annulment of the contract.

## 2. Manpower

The contractor shall deploy sufficient qualified man power required for meeting functional requirement of client / employer as given below,

- a) Operation & Maintenance of Electrical installation: General maintenance jobs and attending to specific complaints shall be carried out round the clock daily including Sundays by keeping at least one qualified and skilled electrician and one assistant for electrical/telephone system all days. Sufficient relievers are also to be deployed to take care the duty of general staff proceeding for leave or duty off. During day time one supervisor having degree/diploma holder in electrical / mechanical discipline with minimum 2 years experience shall be posted.
- b) Number of technical staff as mentioned above shall be increased depends on the necessity when the vessel are in berth and or the ELL crane operations are going on.
- c) The contractor or his representative shall remain in touch with the Engineer in charge of CoPT or GoI staff regarding instructions in connection with day-to-day operation and maintenance work. He will also keep records of materials / consumables procured by him from time to time. Contractor shall coordinate personally and promptly with CoPT / GoI / Other statutory bodies in case of power failure to restore the supply and rectification of fault in case of fault is in main feeder.
- d) The contractor shall also remit the electricity charges, water charges and other statutory charges to the concerned utility / other agencies as and when required or as specifically demanded by the Engineer in charge. However the payments towards the above shall be reimbursed by GoI within 2 weeks or the GoI shall hand over the amount to the contractor in advance. No penalty or interest or penal interest whatsoever shall be reimbursed if the payment is delayed on account of failure to remit the amount in time by the contractor.
- e) It shall be the responsibility of the contractor to arrange for deployment of operating/maintenance gang beyond normal working hours/on holidays etc. whenever need arises. (Such as for completion of the on-going maintenance/ testing etc. and/or to

meet any exigency) without additional cost.

- f) It shall be the responsibility of the contractor to keep all equipment and working area in a clean condition.
- g) Contractor is bound to extend full co-operation to other agencies who are to work in the premises.
- h) The contractor shall inform immediately to Engineer-in-charge, about any abnormality found in any equipment.
- i) The contractor shall make arrangements for all materials, labour, deputed manpower along with tools/tackles, etc. from time to time and as and when required.
- j) The contractor should ensure regular check up of the entire cable and piping networks and shall have to arrange the repairing of the equipments, pipes, fire extinguishers, cable and piping joints etc. as & when required or as directed.
- k) The contractor shall have to arrange the training programme for the occupants of GoI so that they are able to make use of the Fire fighting system at the time of emergency.
- l) The contractor shall have to maintain all records relating to the operation, maintenance and servicing of the systems/equipments as asked for and shall have to make the same available for inspection as & when asked for.
- m) The schedule for periodic inspection and maintenance of the major equipments and all accessories shall be submitted by the contractor and it shall be contractor's responsibility to carry out routine maintenance for the up-keep of the system as a whole, to ensure trouble free service round the clock. If the equipments requires major maintenance, the same shall be informed to OEM with copy to GoI/CoPT.
- n) Contractor is to keep a record of the periodic inspection done and inform any shortcomings noticed.
- o) The cleaning of all the system equipments, greasing of all pumps/fans & other equipments as per the maintenance manuals, polishing of the brass parts of the system network & fire-extinguishers, maintenance of piping system, batteries etc., shall be the responsibility of the contractor including the cost of materials used for cleaning & polishing of the equipments and no extra charges for this shall be payable.
- p) The contractor shall have to inform the OEM of equipment regarding the guarantee maintenance and ensure that regular servicing in all respects is carried out as per the operation & maintenance manuals of the system or as asked for.
- q) The contractor shall also carry out break down/ preventive maintenance of all equipments if it becomes out of guarantee period rendered by the OEM. The details of guarantee obligation of all equipments are separately provided in the Scope of work.
- r) The works stated herein are only an indication to the extent of work. If any specific requirement is warranted due to exigencies or any other reason, the contractor shall carry out the same in connection with the proposed O&M.
- s) Qualification of technician / Assistant for O&M work

S.N	Description	Qualification	Remarks
1	Electrician/ plumber/ wireman	ITI in the relevant discipline. B class wireman license is preferred for the Electrician / wireman	Pass in 10 <sup>th</sup> Standard with 10 years experience in relevant installations.

2	Assistant	8 <sup>th</sup> Standard with 5 years experience in electrical / mechanical installations	
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**2.1. Man power requirement for Operation and routine maintenance of ELL Crane**

- (a) The crane shall be operated normally in 2 shifts starting from 8.00 hrs to 22.00 hrs per day throughout the year i.e. 365 days. If required, contractor shall keep Skeleton staff to operate the crane for the 3<sup>rd</sup> shift also. In this connection the relevant labour rule shall be adhered to by the contractor. The operator/assistant shall be provided with the basic amenities by the contractor. The labour force engaged by the contractor shall be provided with weekly off, minimum wages etc as per rule.
- (b) For operating the ELL crane 1 operator, 1 greaser cum signaling man shall be deputed in 1 shift. In addition a reliever who is capable of doing crane operation and signaling system shall also be engaged.
- (c) Hooking / unhooking of the cargo in the berth/trucks shall be in the scope of the contractor. Number of work force for hooking & unhooking operations depends on the weight of the cargo in one packet. The details of cargo shall be brought to the notice of the contractor 1 day before the vessel is berthed.
- (d) Conducting Routine maintenance of the equipment as per the maintenance schedule shall be in the scope of the contractor. The contractor shall inform the major break down to the owner / AMC contractor then and there. The contractor shall also clean the crane track and cable trench protection system for smooth operation of the crane.
- (e) Qualifications of ELL Crane operators: The Crane operator engaged by the contractor should have passed minimum of 10<sup>th</sup> Standard or equivalent and at the age group of 25-65 having very good health standard including clear eye sight as prescribed by Dock Safety Inspectorate. The Crane operator shall pass the Crane operator Training Course conducted by Infrastructure Equipment Skill Council (IESC) under Ministry of Skill Development & Entrepreneurship, GoI with minimum of 2 years experience after passing course OR the operator should have the minimum of 7 years experience in operating ELL Crane / Tower crane / Gantry crane Mobile Harbor Crane of 15 Ton or more in a government organizations/ Crane hiring organization.  
 The candidates proposed by the contractor for crane operation shall pass Crane operation test in CoPT / GoI the selection will be made on the recommendation of CoPT / GoI. The contractor shall comply with all Rules and regulations issued by the Dock Safety Inspectorate from time to time.  
 The Greaser / signal man engaged by the contractor shall have the experience in this field at least for a period of 5 years.
- (f) The details of normal maintenance is given under “Scope of Work”

**2.2. Man power requirement for O&M of Fire fighting equipments.**

- a) Necessary manpower envisaged for O&M shall be deployed by the contractor so as to carry out routine & preventive maintenance as provided under Scope of work effectively.
- b) If any contingency is warranted, the staff deployed for maintenance of fire fighting equipments shall assist the contingent team engaged by other agencies.
- c) The details O&M activity is given under “Scope of work”.

**3. Payment Terms**

- a) Payment will be made on monthly basis within 2 weeks from the date of submission of invoice and joint measurement accepted by both the contractor & employer. In case it is found that there is under payment / No payment to the employees engaged by the contractor, the action including forfeiture of security deposit, black-listing of the contractor and cancellation of contract may be taken.
- b) While submitting the bill, the contractor must file a certificate indicating the following along with ESI contribution sheet downloaded from ESIC Insurance Portal:-
  - ✓ Wages of workers were credited to their bank accounts on \_\_\_ (acknowledgment by bank enclosed).
  - ✓ ESI Contribution relating to workers amounting to Rs. \_\_ was deposited on \_\_\_ (Copy of challan enclosed with contribution sheet).
  - ✓ We are complying with all statutory Labour Laws including Minimum Wages Act.
- c) The payment would be made on monthly basis on verification of attendance sheets, wage Register, monthly ESIC/EPF/Service Tax challan/Deployment sheets/ Duty Roster/ Attendance Sheet duly verified by the designated official of the concerned site/office, documents in support of salary disbursement details.
- d) Workers of contractors should get the wages at least on the tenth (10) day of each month and the contractor must maintain adequate working capital to meet the requirements of the wage payments.
- e) The payment of wages to the staff deployed by the contractor shall not be linked to the payment of bill by CoPT.
- f) If the contractor fails to provide proof of payment of statutory dues, his contract will be liable to be terminated after serving one month's notice.
- g) Cash payment receipt will not be entertained and payment in cash will be deemed as no payment at all. If the agency does not make payment through electronic transfer, the contract will be liable to be terminated.

**3.1. Time frame for attending / rectifying the defect.**

- a) Attending Electrical / Mechanical complaints.

S.N	Attend	Diagnose	Rectification – Minor complaint	Rectification – Major complaint
1	Within 20 Minutes from reporting	60 Minutes from reporting time	180 Minutes from reporting time	15 Hours from reporting time

Minor complaint: Fuse blown, MCCB/MCB failure, terminal pitting, replacement of bulbs etc

Major complaint: Cable fault, Bush replacement etc. However the time required for trench excavation will not be counted for computing time of rectification of major complaint.

- b) Allocation of ELL crane

All routine Check up & maintenance of ELL crane shall be completed before the commencement of each shift and the crane shall be made ready for operation within 15 minutes of the commencement of each shift.

#### **4. Liquidated Damages**

- 4.1.** Whenever and wherever it is found that the work is not up to the mark, it will be brought to the notice of the Contractor by the staff of the offices and if no action is taken to do the work up to the mark within the time period of 3 hours , liquidated damages @ Rs. 500/- per complaint shall be imposed. In case the contractor failed to rectify the defects in the stipulated time period as mentioned Clause 3 above, penalty will be imposed @ 500/- for every one day delay or part thereof from first day up to 2 days. If the fault is not rectified within this extended period of 2 days , the rectification work will be entrusted to other agencies at the cost and risk of the contractor. In addition to this, penalty @ Rs 1000/- per day for non performing of the equipment till it is commissioned will be recovered from the contractor.
- 4.2.** In case of absence of skilled staff and highly skilled staff /supervisor, a penalty will be imposed @ 300/- per day for each absentee staff. In case of absence of the group, penalty @ 2000/- per day will be imposed in addition to the above.

#### **5. Settlement of dispute**

- 5.1.** Every dispute, difference or a question which may arise at any time between the parties hereto or any person claiming under them, touching or arising out of or in respect of this MC or the subject matter thereof shall first be endeavored to be amicably resolved at the Top Management level of the parties. However, in the event of such dispute, difference or question, etc. remaining unsolved, the same shall be referred to the arbitration by a sole Arbitrator to be nominated by the CoPT under the provisions of the Arbitration & Conciliation Act 1996. The place of such arbitration shall be at Cochin.
- 5.2.** The Courts in Cochin alone shall have exclusive jurisdiction in respect of matters arising out of this Maintenance Contract Agreement.

#### **6. Nodal Point of Contact**

The Nodal Point of Contact for formal correspondence and for processing the bills shall be Chief Mechanical Engineer on behalf of CoPT and the Director, Base Unit (Kochi) on behalf of GoI.

- 7.** All necessary Statutory Licenses from concerned Government Departments / Local Bodies including the labour department if any necessary for execution of the work are to be obtained by the contractor.

All security and safety regulations and guidelines as per the applicable law are to be followed. All guidelines/directions of CoPT's Security Division must be followed

#### **8. Contract Agreement**

An agreement will have to be executed on Kerala Stamp Paper of value Rs.200/- for the due and proper fulfillment of the contract. The successful bidder shall carry out and complete the work in every respect in accordance with the contract.

#### **9. Performance Guarantee**

The performance security shall be 10% of the contract value for the contract amount entire MC period. The Performance Security shall be provided by the Contractor to the Employer not later than 21 days from the date of issue of LoA. The performance security shall be furnished in one of the following forms:

- a) Banker's Cheque/Demand Draft of a Scheduled Bank drawn in favour of FA&CAO, CoPT.
- b) An irrevocable Bank Guarantee (BG) enforceable and encashable at Cochin, drawn from any Nationalized / Scheduled bank, operating in India as per the proforma.

**10. TAXES & DUTIES**

- 10.1.** All duties, taxes [excluding Goods and Services Tax (GST)] and other levies payable by the bidder/Contractor under the Contract, or for any other cause as applicable on the last date of submission of Bid, shall be included in the rates, prices and the total Bid Price submitted by the Bidder. All investments, operating expenses, incidentals, overheads etc. as may be attendant upon execution and completion of works shall also be included in the rates, prices and total Bid price submitted by the bidder. However, such duties, taxes, levies etc. which is notified after the last date of submission of Bid and/ or any increase over the rate existing on the last date of submission of Bid shall be reimbursed by the CoPT/GoI on production of documentary evidence in support of payment actually made to the concerned authorities. Similarly if there is any decrease in such duties, taxes and levies the same shall become recoverable from the contractor. The details of such duties, taxes and other levies along with rates shall be declared by the bidder.
- 10.2.** Cess as per Building and other Construction Workers Welfare Cess Act (Act 28 of 1996) at the rate of one percent or at the rates prevailing in force at the time of payment of bills, of the cost of construction should be borne by the contractor and the same will be deducted from contractor's bills while making payment or when crediting amount to contractors account.

**11. SAFETY**

The contractor shall take necessary precautions to ensure safety of his crew, materials, equipment and the works during the period of the contract. No claim from the contractor for loss of or damage to equipment, materials, crew of the works during the course of the work due to natural causes like cyclones, gales, floods, rains or other cause or combination of causes will be entertained by GOI.

**SIGNATURE OF TENDERER**

## SECTION IV

### COCHIN PORT TRUST

#### MECHANICAL ENGINEERING DEPARTMENT

Tender No: F2/T-20/O&M Contract- GoI/2019-M

## Scope of Work

### 1. Introduction

This section describes the Area of Operation, the Nature of Services and the Work Breakdown for providing Services of Operation & Maintenance of GoI Jetty by the contractor.

### 2. Details of installations

Following are the probable installations to be operated and maintained by the successful bidder for a period of 1 year, extendable for further 1 year with same terms and condition. Details of equipments to be maintained is as below .

S.N	Details of inventory	Approximate quantity	Remarks
<b>I</b>	<b>Transformers</b>		
a	Copper wound-11KV/433V, cast resin, 1600KVA. 3Phase, 11KV/433V.,	1 No (Main jetty)	The equipment is under warrantee up to 01/12/2025
b	Copper wound-11KV/433V, cast resin, 160 KVA. 3Phase, 11KV/433V.,	1 No ( Gate office)	-----Do-----
c	Copper wound-11KV/433V, cast resin, 500KVA. 3 Phase, 11KV/433V.,	5 Nos ( Main jetty, B&C sites)	-----Do-----
<b>II</b>	<b>11 KV installations such as RMU, CMU,VCB etc</b>	11 Nos (AT various locations of W/Island)	01/01/2021
<b>III</b>	<b>Different types of LT panels, SS junction boxes ranging from 315 A to 2500 A at 440 V grade, located at Berth, Offices pump house etc</b>	20 Nos (At jetty, Gate office, B&C sites)	01/01/2021
<b>IV</b>	<b>Variable Refrigerant flow type (VRF) , AC system with total capacity 20 HP</b>		

a	Indoor units, cassette type ranging from 0.6 Ton to 3.2 Ton	13 Nos (Gate office)	The equipment is warrantee up to 01/01/2022
b	Top Discharge units, 10 HP	2 Nos (Gate office)	-----Do-----
<b>V</b>	<b>Street lighting, yard lighting etc</b>		
a	7 mtrs high Street lights poles with LED fittings with luminary,	70 Nos (Jetty, B&C sites)	01/01/2021
b	16 mtrs, High mast / Medium mast with LED fittings with lamp	4 Nos (JettyB&C Sites)	-----Do-----
<b>VI</b>	<b>CCTV system with 24 channel NVR, 4 PTZ cameras, 4 Fixed cameras and other accessories</b>	<b>1 set (Jetty)</b>	-----Do-----
<b>VII</b>	<b>Video Conferencing system with 55" LED monitor and one TV</b>	<b>1 Set (Gate office)</b>	-----Do-----
<b>VIII</b>	<b>EPABX system and connected accessories</b>		
<b>IX</b>	<b>5 kwp solar panel with 10 kVA inverter and 9600 VAH capacity battery</b>	<b>1 Set (Gate office)</b>	-----Do-----
<b>X</b>	<b>30 KVA UPS with 12000 VAH battery</b>	<b>1 Set (Gate office)</b>	-----Do-----
<b>XI</b>	<b>HT and LT cables</b>	<b>4000 Mtrs (AT various roads of W/Island)</b>	-----Do-----
<b>XII</b>	<b>Internal and External Electrical Installations such as lights, fittings, power outlets, switchboards, distribution boards etc cable &amp; wiring systems in the office, pump house and security cabins viz. light fittings, fans, 5 A plug sockets etc</b>	<b>LS</b>	
<b>XIII</b>	<b>Duct lights, kerb lights in the berth</b>	<b>LS (Jetty)</b>	
<b>XIV</b>	<b>Fire hydrant system</b>		
a	Pumping system, its prime mover etc	2 Nos (Jetty)	01/01/2021
b	Pumping line, valve operation, OH & UG tanks etc	LS	---do---

c	Electrical control system connected with pumping system	LS	---do---
XV	<b>DG sets - 50 KVA</b>	1 No (Gate office)	---do---
XVI	<b>15 Ton Capacity ELL crane - 1 No with its trailing cable, trailing cable protection system etc</b>	1 No (Jetty)	01/01/2029

3. The locations of installation: Main location is jetty with cantilever ducts constructed at W/Island, approach trestle, pump house, Technology building, security cabin etc, Jetty crane  
In addition to the above another location ie B&C sites where transformer, VCB panel etc are installed.

4. **Nature of Services.**

- a. The Operations and Maintenance (O&M) services can be both routine (day-to-day) and periodic.
- b. It will also imply repairs. The period of warrantee for different equipments is as mentioned in clause No 2 above. The contractor shall carry out the routine maintenance for the equipment till the date of expiry of warrantee and thereafter he shall carry out the breakdown/ preventive maintenance also without any extra cost.
- c. In the case of cable fault due to the interference of outside agency, the rectification cost shall be reimbursed as per the cost for material and labour with escalation of 10% on basic price from the agency concerned. In other cases the rectification work shall be undertaken at the cost and risk of the contractor.

5. **General Scope of Work:**

- a) The following scope of work is only indicative and contractor is advised to use his own judgement in evaluating the quantum of work involved in round the clock operation and maintenance of the systems.
- b) To operate and maintain DG set with rating of the HT and LT power equipment i.e right from the outgoing point of metering equipment, 11KV oil immersed circuit breakers, HT cables, HT panels, 1600 KVA , 500 KVA, 11 kV/443 V transformers, incoming and outgoing LT panels, Switch gear, feeder panels, feeder switchboards, associated protection equipment's, cables, control cables, LT bus ducts, battery charges, capacitor panels/power factor correction systems, pump panels, mechanical ventilation and pressurizing system etc. and their associated switchgear etc. round the clock throughout the year.
- c) To monitor & record the incoming supply parameters, make necessary tap changing to maintain the voltage in limits, switching on the capacitor banks, to keep the maximum demand within prescribed limits etc.
- d) To maintain the Internal and External Electrical Installations like lights, fittings, power outlets, switchboards, distribution boards etc cable & wiring pertaining to the same in good working condition. Attending to the complaints/ faults, preventive maintenance to avoid breakdowns etc. round the clock throughout the year.
- e) To check earth pits pertaining to all equipment's, systems and buildings etc. Watering them as

- and when required and testing their earth resistance etc.
- f) To check the transformers parameters and cooling systems for leakage of transformer oil and topping up of the same as and when required.
  - g) To check/clean with CTC/ tighten all electrical contacts monthly. The heated terminals if required to be made in proper condition by using appropriate size crimping tool and lugs.
  - h) To check and replace, if necessary the performance of all operational safeties. This activity has to be done at least once in three months and if required earlier too.
  - i) To check and clean all electrical fittings including fans on monthly basis and as per requirement.
  - j) To lubricate motor/pumps bearings periodically and replace the bearings when necessary and submission of report on monthly basis.
  - k) To check electrical circuits and rectify faults as and when necessary.
  - l) To clean, tighten electrical contact points once a month.
  - m) To replace electrical contacts and other items as and when required.
  - n) To tighten all the fasteners of the bus ducts, bus bars and cables as and when necessary and at least once in three months. Also to re-terminate the heated up contacts and replace cabling/wiring as and when necessary
  - o) To ensure that the control circuitry of all systems are perfectly working.
  - p) To check the silica gel of the transformers and to dry them as and when required.
  - q) To test the oil samples of transformers and to give suggestions for dehydration of oil if required.
  - r) To arrange for a well-equipped first-aid box and maintain it in a healthy condition to take care of first aid for any eventualities of their workman at site.
  - s) Arrange all type of repairs, spares & consumables required for proper working of electrical installations.
  - t) Any other electrical works as assigned by the engineer in charge essentially required for keeping the equipment's in good healthy working conditions though not indicated above.
  - u) Operation of DG sets during office working hour and holidays whenever required.
  - v) Yearly servicing of ACB, VCB, all relay, calibration of meters and [providing report for the same
  - w) Handling of power cables for giving shore supply to the vessels/ supply to cope points/ supply for maintenance purpose ensuring proper safety, from/to power supply points available.
  - x) Handling of cables for giving networking/telephone connections to the ship from external points for ensuring service

## 6. Operation & Maintenance – Electrical & Mechanical

The following routine operations are to be undertaken daily/ periodically all over the

- (a) Switching on/off lighting as per schedule. Repair/ replacement of defective bulbs/ tubes.
- (b) Operation of Air-conditioning system of Gate office Building and Security Cabin.
- (c) Operation of all water pumps, fire pumps, transformers, electric points, cope points, internal/external lighting, etc.
- (d) Operation (including routine battery check-up tests) of all electric back-up systems such as Inverters, UPS, Generators, etc.
- (e) Switching on /off & Operation of solar panels and checking the energy out put.
- (f) Operation & routine maintenance of Jetty Crane in two shifts. (Preventive / Breakdown maintenance will be done by the supplier (as part of Warranty/AMC. ).

## 7. Maintenance schedule of Electrical/ Mechanical equipments.

Asset/Equipment	Activity
Transformers, RMUs, VCB panels, cables etc	<b>1<sup>st</sup> shift</b>
	As per maintenance schedule of CoPT
	Record parameter
	Cleaning the room
	<b>2<sup>nd</sup> shift</b>
	As per maintenance schedule of CoPT
	Record parameter
	Cleaning the room
DG	<b>1<sup>st</sup> shift</b>
	LUBRICATION- Check engine oil level.
	check & record parameter of DG set
	Check battery voltage
	<b>2<sup>nd</sup> Shift</b>
	Visual check parameter of DG set
	Check battery voltage
	AIR SYSTEM - Check pre cleance dust pan weekly.
	COOLING SYSTEM- Check coolant level.
	<b>3rd shift (If required) (If require)</b>
	FUEL SYSTEM- Drain sediments from fuel tanks.
	Drain air tank.
	Check and correct leaks.
Drain fuel filter/Water separator daily.	
wall/Exhaust Fan	<b>1st shift</b>
	Visual check for unusual noise & vibrations
	Visual check for any damage
	<b>2nd shift</b>
	Visual check for unusual noise & vibrations
	<b>3rd shift (If required)</b>
Check for any damage for cable, & loose connection	
	<b>1st shift</b>
	Visual check of cable for any sign of overheating, chattering, burning smell etc.

Panel/Control panel/DB/Socket	<b>2nd shift</b>
	Check relay status, reset if it is trip .
	record voltage, current, pf etc reading from panel
	<b>3rd shift (If required)</b>
	cleaning of panels
	Check for any loose connection, tight the same if any,
VRF AC	<b>1st shift</b>
	Take room temp. reading
	Check fault status at remote
	Check for any abnormal sound
	Check for air leakage and duct damaged (Ductable A/C)
	Ensure recycling operation of A/Cs.
	Check of temperature sensor unit for cut off and ON
	<b>2nd shift</b>
	Take room temp. reading
	Check for cleanliness and any abnormal sound
	Check of temperature sensor unit for cut off and ON
	Check A/C grills, clean it if dirty
	<b>3rd shift (If required)</b>
	Take room temp. reading
	Check the filter condition for cleaning
Check fault status at remote	
Check for any damage or foul / burning smell	
Fire Engine of fire pump room	<b>1st shift</b>
	Check oil leakage in pipes
	Cooling system
	Check soft water supply
	Check for any leakage
	<b>2nd shift</b>
	Check the air passage for leakage
	Exhaust, Check the exhaust for leakage
	<b>3rd shift (If required)</b>
	Fuel system, Drain water and sediments accumulated at the bottom of the fuel tank
	Check the fuel level tank and fill up the tank at the end of each working day
	Air intake, Remove the dust from the evacuator valve
	Check exhaust for restriction
	<b>1st shift</b>
	Check for all suction and discharge valves are open.
	Operation of fire pump
	Check for electrical supply connections.

Fire Pumps	<b>2nd shift</b>
	Check for any leakage /abnormality in pipeline
	<b>3rd shift (If required)</b>
	Check & rectify water leakage from seal/glands tightness of all connections
Fire detection system	<b>1st shift</b>
	Check the current device status of top
	Devices- check for dirty devices and clean it.
	<b>2ND SHIFT-</b> Visual examination of the battery condition and its electrical connections feeding the system, rectify the same if found faulty
	<b>3RD SHIFT (IF REQUIRED)-</b> Rectification of troubles.
fire hydrants & Fire Extinguishers	<b>1st shift</b>
	Check system pressure of hydrant line
	<b>2nd shift -</b>
	Check for all isolating valves are open
	<b>3rd shift (If required) -</b> Check for physical condition of hose reel/ hose pipes, nozzle, connectors etc
Lights	<b>1st shift-</b>
	check the on/Off status of all lights, if any found in non-working condition, get it illuminate by replacing/repair the light
General	<b>1st shift</b>
	Co-ordination with all facilitation & technical rooms for proper working of system
	Frequent rounds to site to check the operation & healthiness of equipments
	Supervision & overview of site day to day operation & overcome general complaint
	Maintain log books, check sheets, various registers etc properly.
	Check the ON/OFF condition of lights as per lighting requirement of Gol
	Check for any humming & chattering noise
	Check for any foul and burning smell
	Check for any tripping & if found reset the same after checking the proper cause.
	Check the relay status
	Check & record the load on panels
	<b>2nd shift</b>

	Take all necessary energy meter readings of panel
	Take & record temp. of technical rooms
	Co-ordination with all facilitation & technical rooms for proper working of system
	Frequent rounds to site to check the operation & healthiness of equipments
	Supervision & overview of site day to day operation & overcome to general complaint
	Maintain log books, check sheets, various registers etc properly.
	Check the ON/OFF condition of lights as per lighting requirement of GoI
	Check for any humming & chattering noise
	Check for any foul and burning smell
	Check for any tripping & if found reset the same after checking the proper cause.
	Check the relay status
	Check & record the load on panels
	<b>3rd shift (If required)</b>
	Exterior cleaning & dusting of equipments
	lighting of all exterior depot lighting
	Co-ordination with all facilitation & technical rooms for proper working of system
	Frequent rounds to site to check the operation & healthiness of equipments
	Supervision & overview of site day to day operation & overcome to general complaint
	Maintain log books, check sheets, various registers etc properly.
	Check the ON/OFF condition of lights as per lighting requirement of GoI
	Check for any humming & chattering noise
	Check for any foul and burning smell
	Check for any tripping & if found reset the same after checking the proper cause.
	Check the relay status
	Check & record the load on panels.

**8. Equipment/System wise Preventive Checklist**

<b>Asset/Equipment</b>	<b>Frequency</b>	<b>Activity</b>
Transformers, RMUs, VCB panels, cables etc	<b>weekly</b>	As per maintenance schedule of CoPT.
	<b>quarterly</b>	As per maintenance schedule of CoPT
DG	Weekly	LUBRICATION- Check engine oil level.
		FUEL SYSTEM- Drain sediments from fuel tanks.
		AIR SYSTEM - Check pre-cleance dust pan weekly.
		Check air clearance restriction cleaner, change air cleaner element if required.
		COOLING SYSTEM- Check coolant level.
		OTHER MAINTAINANCE- Drain air tank.
		Check and correct leaks.
		Drain fuel filter/Water separator daily.
		Check battery status and maintain properly.
		No load testing
Exhaust Fan	Monthly	Check for abnormal sound and vibration
		Measure current and voltage.
		Clean & tightened the connections.
		Visual check for any corrosion and damage.
Panel/Control panel/DB/Socket	Half yearly	cleaning of panels
		Check for any loose connection, tight the same if any,
		Visual check of cable for any sign of overheating
		Clean the contacts of contactors.
		Functioning of switches, relays breakers.
		Check filter for cleaning

AC	Weekly	Check fault status at remote
		Check for any abnormal sound
		Check of temperature sensor unit for cut off and ON
		Cleaning of filters
		Check and clean the drains
		Check for Any Overheating mark.
	Monthly	Wash the cooling coil if required.
		Outdoor unit maintenance.
		Measure current and voltage.
		Check and Tight the nut bolts of indoor and outdoor units.
		Check for proper working of MCB and RCCB
		Tight the electrical connections
Measure the grill temp.		
Fire Engine of fire pump room	Weekly	Lube system Check engine oil level by opening Dipstick it should be done initially & 15 min. after shut down, top up req.
		Check oil leakage in pipes
	Monthly	Cooling system Check soft water supply
		Check for any leakage
		Check hose pipe connections for looseness
		Check the circulation of water for any restriction
		Fuel system Drain water and sediments accumulated at the bottom of the fuel tank
		Check the fuel level tank and fill up the tank at the end of each working day
		Air intake Remove the dust from the evacuator valve
		Check the air passage for leakage
		Exhaust Check the exhaust for leakage

		Check exhaust for restriction
		Electric
		Check battery connection for looseness
		Check the electrolyte level of each cell, it should be 1/2" above plates. Fill if required
	Quarterly	Apply petroleum jelly on battery terminals if required.
		Repeat the weekly check
		Air intake clean the bowl of air cleaner. Change the element if required
		Electric check the tension of V belt and adjust if required
	Half yearly	Check the connection of starter, dynamo and control panel.
		Repeat the quarterly check
		Lub system Replace the lube oil
		replace the lube oil filter element
		Fuel system Clean the filter sleeve with clean diesel
Replace the pre filter insert of fuel filter		
Other maintenance, check the tappet valve clearance and adjust if required.		
Yearly	Repeat half yearly check	
	cooling system clean radiator externally	
	Check the thermostat element	
	Fuel system Check the fuel injector and adjust if required	
	Clean the fuel tank thoroughly	
		Operation of fire pump
		Check for any leakage /abnormality in

Fire Pumps	weekly	pipeline
		Check & rectify water leakage from seal/glands
	Monthly	Greasing of bearings
		tightness of all connections
Yearly	Check integrity of electrical insulation.	
Fire detection system	Monthly/quarterly	Main FACP Check the battery terminal
		Tightening the connections
		Clean the panel with soft brush / light air pressure.
		Check the current device status of top repeater FACP & MCP & Hooters
		tightening of connections
		cleaning of panels with soft brush/light air pressure
		MCP & hooters testing for correct position
		Smoke detectors Operate one trigger device of randomly selected zone circuit to test the ability of control and indicating panel equipment to receive a signal and to sound in presence of GoI/CoPT engineer in charge
		Visual examination of the battery condition and its electrical connections feeding the system
		Heat detector Tightening of connections
		cleaning of detectors testing to ensure correct operation by heat up detector, in presence of GoI/CoPT engineer incharge

		Junction box Tightening of connections Cleaning of junction boxes Continuity checked
fire hydrants & Fire Extinguishers	Monthly	Check for physical condition of nozzle, connectors etc
		Check pressure and expiry date of all portable fire extinguishers.
		Check system pressure of hydrant line and record
Light	Half Yearly	Check the tightness of connections
		Cleaning of lights
Earthing	Monthly	Visual check of earthing connection
		Tightness of connection
	Yearly	Check the earth resistance and submit the report

**9. Breakdown Maintenance:**

<b>Equipment</b>	<b>Key Activity.</b>
<b>Panel/ Control Panels</b>	1, Minor rectifications i.e. correcting loose connections if any 2. Replacement of faulty MCB/MCCB in the DB 3. Replacement of contactors, fuses, relays etc.
<b>Fire Alarm &amp; Detection System</b>	1. Checking of faulty detectors and rectify if possible.
<b>Lighting</b>	1. Minor rectifications i.e. correcting loose connections if any 2. Replacement of faulty choke/ tube/ fixture etc.
<b>Circuit breaker</b>	1, Minor rectifications i.e. correcting loose connections if any 2. Replacement of faulty ACBs & other breakers in the DB
<b>ACs</b>	1. Minor rectifications i.e. correcting loose connections if any 2. Replacement of fuse/ capacitor, control card etc.
<b>DG</b>	1. Minor rectifications i.e. correcting loose connections if any

## 10. Operation and Maintenance of ELL Crane

Adequate staff ( Electrician/Mechanic/Helper) shall be maintained under a Supervisor in each shift to carry out the routine maintenance of the crane. The crane is intended to be operated in 2 shifts per day from throughout the year i.e. 365 days. The duration of the shifts shall be 8 hours each preferably 6 to 14 hrs and 14 hrs to 22 hrs. In this connection the relevant labour rule shall be adhered to by the contractor. The operator/assistant shall be provided with the basic amenities by the contractor. The labour force engaged by the contractor shall be provided with weekly off, minimum etc as per rule.

For operating the ELL crane one operator for one shift and one reliever, i.e. totally three shall be assisted by at least 1 signal man / greaser in the berth for the crane operation. In addition to the above, hooking / unhooking of the cargo in the berth/trucks shall also to be in the scope of the contractor. Sufficient number of work force shall be deployed for hooking/unhooking operation depends on the weight/quantum of cargo. Conducting Routine maintenance of the equipment as per the maintenance schedule shall also be in the scope of the contractor. The contractor shall inform the major break down to the owner / AMC contractor then and there. The contractor shall also clean the crane track and cable trench protection system for smooth operation of the crane.

▶ Quantity		1 No.
▶ Lifting capacity		15T capacity on hook with
▶ Materials to be handled		Machine parts, Electrical and mechanical Equipments , break bulk cargo etc.
Hook Assembly		Provision for attaching as per crane capacity.
▶ <u>Outreach(radius)</u>		
▶ Maximum		28 M
▶ Minimum		11 M
▶ Rail size		CR 100
▶ Tolerance		As per clause 8.2.3 of FEM standard
Rail top level with respect to chart datum level.		
▶ Height of lift		
▶ Above berth		25 m
▶ Below berth		13 m
▶ Total		39 m
▶ Operator's eye level above berth		Shall be comfortable for smooth operation and full vision inside deck.
▶ Wheel load maximum		20 T
▶ Inclination crane		+/- 1 degree.

installation						
▶ Source of External Power supply (Incoming)		415 V; 3phase; 50 Hz AC				
▶ Short circuit level at substation.		25 KA.				
▶ Permissible Voltage and Frequency variations  ▶ For LT 415 V		<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Voltage</u></td> <td style="text-align: center;"><u>Frequency</u></td> </tr> <tr> <td style="text-align: center;">+10% &amp; - 9%</td> <td style="text-align: center;">+3% &amp; -3%</td> </tr> </table>	<u>Voltage</u>	<u>Frequency</u>	+10% & - 9%	+3% & -3%
<u>Voltage</u>	<u>Frequency</u>					
+10% & - 9%	+3% & -3%					
▶ Ambient Temperature		40° C inside and 45 <sup>0</sup> C outside				
▶ Rail span		5.9 M				
▶ Portal Height		4 M ( For easy passage of vehicle)				
▶ Wind load ▶ Design wind velocity		180Km/hr =50M/sec The crane shall be designed & manufactured so as to operate in any position without any fixing under steady wind pressure of 25kg/m2 over the full height of the crane.				
<b><u>Drives (ALL VVVF)</u></b>		<b><u>Speeds M/MIN</u></b>				
		<b><u>With Load</u></b> <b><u>Empty</u></b>				
▶ Hoist & Lowering		15 M/Min                      30 M/Min				
▶ Slew motion		0.8 RPM                      0.8 RPM				
Boom luff		10.2 AVG                      10.2 AVG				
Gantry travel		30 M/Min                      30 M/Min				
The electrical drive controls supplied shall be VC –VFD technology for optimum performance with latest state of art technology.						

### **10.1. Daily maintenance**

At the start of the shift/ Before operating a crane a pre-operational check and an over all visual check should be completed by an Electrician / technician/ Mechanic. Readings of the measurements from meters

A log book should be used to record the condition of the crane.

### **10.2. Routine inspection and maintenance**

Regular inspection, maintenance and repair are to be carried out weekly, monthly or quarterly in accordance with the manufacturer's instructions. Cranes should be routinely inspected and tested even if they are not operated regularly.

A log book shall be maintained for the record of the inspection.

- a. visual inspection and measurements as necessary of structural components and critical parts including brakes, gears, fasteners, pins, shafts, wire ropes, sheaves, locking devices and electrical contactors
- b. crane functions
- c. controls for speed,
- d. smoothness of operation
- e. limits of motion
- f. emergency and safety switches and interlocks including limiting and indicating devices
- g. lubrication of moving parts
- h. load indicator devices
- i. filters and fluid levels and leaks
- j. signage including warning signs
- k. control markings
- l. wear on wheels and tyres, and
- m. extra items nominated in the crane manufacturer's instructions.

If a crane has been damaged and there are risks to health and safety, it should be immediately taken out of service and people prevented from operating the crane. The matter should be reported immediately to the concerned Supervisor and the Engineer charge of GoI/CoPT.

### **10.3. Annual Inspection**

It should include every item specified by the crane manufacturer for annual inspection and every item included in the routine inspection and maintenance programs.

Annual inspections should include a detailed check of:

- a) functioning and calibration of limiting and indicating devices
- b) structural and wear components
- c) tolerances for wear limit
- d) evidence of corrosion
- e) critical areas for evidence of cracking

### **10.4. Record keeping**

10.4.1. Crane records including maintenance logbooks of the significant events concerning the safety and operation of the crane must be kept and readily available. Records should be kept in a suitable format and must be transferred with ownership of the crane. Entries in the maintenance logbook

should:

- a) clearly describe the work carried out and parts replaced
- b) be dated
- c) note the name of the person carrying out the work, and
- d) be signed by the person carrying out the work.

10.4.2. The checks, adjustments, replacement of parts, repairs, and inspections performed and irregularities or damage concerning the unit's safe use must be recorded.

10.4.3. Inspection records should include a statement from a competent person confirming the item of plant has been inspected and is safe to operate.

10.4.4. Inspection records should include:

- a) The item/areas of the plant inspected.
- b) The signs of wear, damage, cracking or corrosion.
- c) test results,/ photographs /measurements

**11. Scope of work of fire fighting equipments :**

Sl. No.	ITEM	Service to be carried out	Nos/Mts
1	Engine-Make: Cummins India Ltd. Model.6CTAA 8.3 G4. 6 Cylinder. BHP-341.	Daily inspection to be carried out ie. Check Oil level, Coolant level, Belt tension etc. as recommended by OEM may be considered.	1
2	Diesel driven Fire Pump along with engine & gear box ,pipelines, SS 316 Strainer, control panels, cables, cooling arrangements, valves, supports, fittings, diesel tank, control panels, battery & battery chargers etc.-	Daily, Weekly & Monthly checkup to be carried out as per <b>Schedule to be submitted by the contractor.</b>	1
3	Electrical driven Fire Pump with motor and complete pipelines, SS 316 Strainer, control panels, cables, cooling arrangements, valves, supports, fittings, diesel tank, control panels, battery & battery chargers etc. -	Daily, Weekly & Monthly checkup to be carried out as per <b>Schedule to be submitted by the contractor.</b>	1
4	10" Gate Valve- <b>3nos.</b> , 10"NRV- <b>2Nos</b> , 6"Gate valve- <b>3Nos</b> ,	Daily check-Gland leaks & line inspection.  Monthly inspection to be carried out- Check for Gland leaks, cleaning, greasing, gland tightening if any.	8
5	Pressure Gauges, SS, 6", 0-15 Kg/cm2. -5 Nos.	Annual Calibration.	5

6	Cement lining pipe 10", 6" & 4"NB, Sch. 20 ASTM A106 Gr.B /API 5L Gr.B ERW pipes, along with supports, flanges, fittings, gaskets etc. 15mtr,400 mtrs & 25 mtrs.	Daily inspection	440mts
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**12. Other activities to be carried out**

- a) Contractor shall carry out all in-house preventive checks for equipments in scope not covered above and are important for system healthiness.
- b) Replacement of any other faulty component, which can be replaced/repared in- house. (the decision of in-house replacement shall be of GoI/CoPT and bound to contractor).
- c) Contractor shall prepare the equipment wise monthly failure report and submit the same to GoI/CoPT at 7<sup>th</sup> date of every month.
- d) Any released faulty equipment/component shall be the property of GOI/COPT.
- e) Any spare material and consumable required for maintenance shall be provided by the contractor.
- f) Any failure shall immediately be reported to GOI/COPT engineer through e-mail/message.
- g) The contractor supervisor shall store the sufficient inventory and consumables to upkeep the system.

**13. Periodic Maintenance & Repairs.**

- (a) Connecting and disconnecting Electric connection to ship(s) berthed on Jetty.
- (b) Maintenance of electrical and mechanical systems and the associated fittings all over.
- (c) Repairs/ Maintenance of the Air conditioning systems of the Technology Building and the Security Cabin.
- (d) All minor repairs and maintenance of Jetty Crane. Major maintenance and repairs to be undertaken though OEM.
- (e) Load testing of all Gears (including bollards) as per laid down norms.
- (f) Testing and charging of all Fire-fighting equipment and systems.

**14. Miscellaneous**

- 14.1. The above works also include all requirements of tools, spares, consumables (bulbs, tubes, filters, fasteners, washers, etc), **fuel/ oils/ lubricants**, cleaning gear (soaps, liquid detergents, wipes, and material), etc necessary to undertake them satisfactorily.
- 14.2. With regard to maintenance of records of O&M for claiming of expenditure, the norms being followed by the Port shall be applicable. Bills submitted should be worked out based on these records and a summary should be enclosed with the Bill. It is to be noted that records are auditable as per prevailing rules and regulations of the Central Government.
- 14.3. GoI shall provide space to install one AC Porta-cabin at a suitable location to be used as local office (user may have to pay for operating charges such as electricity/ water, if any).
- 14.4. Logistics are to be planned so that all services are efficiently and satisfactorily provided on time.

- 14.5. A suitable mechanism to jointly (CoPT and GoI) monitor all vendors contracted to work on the Jetty shall be put into place to avoid any misunderstanding. This would address following suitably:-
- 14.6. Regular and surprise checks. This would include their attendance record, their proper conduct, obtaining police verification for them, etc.
- 14.7. Liability for safety and security for their respective personnel, equipment and stores should be that of contracted agencies
- 14.8. Monitoring of stores, equipment and spares being moved by contracted firms.
- 14.9. All vendors shall meet the security and safety norms of GoI. Personnel shall don standard safety clothing whilst on work. They shall be required to sign Non-Disclosure Agreement.
- 14.10. Tools & Plants  
All the general & special tools, tackles i/c chain pulley blocks etc. required for proper operation, maintenance and repairs/break down etc, shall be arranged by the contractor at his own cost and issue to the staff deployed by him for this work.

Minimum tools requirements are :

Cutting plier	-	4 Nos.
Screw driver set	-	4 set
Ring spanner full set	-	2 Set
Double handed spanner full set	-	2 Set
Wrench spanner	-	2 Nos.
Hammer	-	4 Nos.
Box spanner	-	1 Set
Digital Insulation tester/Megger/Earth resistance tester-		1 No.
Clamp meter & multimeter	-	1 No
HT Gloves(11kV and above)	-	4 set
Allen key spanner set	-	1 set
Drilling Machine (Power)	-	1 No
Hex saw, Poker	-	1 Set
Cable crimping tool	-	02 No
Mini welding/cutting machine	-	01 No.