

# MAINTENANCE CONTRACT FOR EOT CRANES, HOT, ELECTRICAL AND PNEUMATIC HOISTS IN SHAR CENTRE

## 1.0 SCOPE OF WORK

It is proposed to enter into a non-comprehensive contract for maintenance of EOT cranes, Electrical hoists, HOT and pneumatic hoists in SDSC SHAR, Sriharikota. 105Nos of EOT cranes, 15 Nos of HOT cranes, 18 Nos. of pneumatic hoists and 7Nos of electrical hoist (**Total 145 cranes**) are to be maintained and Stand by duty support is to be extended for the critical operations as detailed in the specification document in Annexure-A.

1.1 The following maintenance has to be carried out on each of the above cranes.

1. Periodical preventive maintenance (PPM) - Once in a year
2. Annual maintenance (AM) and load testing - Once in a year
3. Break down maintenance - As and when required

1.2 *In case of any crane, load testing, preventive maintenance and annual maintenance need to be done additionally at the request of Department, the contractor shall undertake such works at the same cost of similar type of cranes in the list enclosed.*

1.3 Minor and Major break-down calls shall be attended within 12 hours from the time of intimation and Crane shall be made operational within 24 hours and 72 hours respectively without any extra charge.

1.4 During the above maintenance, the contractor shall carry out both electrical and mechanical maintenance. The details of the maintenance works to be carried out are listed in Annexure-A.

1.5 After completion of the maintenance on each crane the contractor shall fill up the checklist provided and get it signed by the Department supervisor identified for the work station. The checklist shall be supplied after releasing purchase order.

1.6 *The maintenance of VVVF drives of cranes are in the scope department. However all other electrical / mechanical systems of cranes are in the scope of the contract*

## 2.0 DURATION OF THE CONTRACT

The period of contract shall be for **Three years (from 01-07-2015 to 30-06-2018)** after placement of the firm Purchase Order. The contract may be extended for a further period of one more year (4<sup>th</sup> year) on the same terms and conditions on satisfactory completion of three years contract period on mutual agreement basis.

## 3.0 WORK STATION

3.1 Satish Dhawan Space Centre (SDSC SHAR) is located in the Sriharikota Island at 17 kilometers East of Sullurupeta. Sullurupeta is 83 kilometers from Chennai on national Highway 5 towards Calcutta and Delhi side. Sullurupeta is connected with train route on Chennai – Gudur Section and is well connected with Suburban trains from Chennai. The Cranes are available in Sriharikota at different facilities and facility to facility distance is approximately about 1 to 10 kilometers.

3.2 For effective supervision during the maintenance these cranes are divided into two work centers designated as WORK CENTRE - A and WORK CENTRE - B. Cranes which are to be maintained under work centers each of these given below. The brief specifications of cranes under each work center are given in Annexure –B.

Sl No	Work station	Type of crane		Location	Distance from Security Gate-I to work centers
1	WORK CENTRE -A	EOT Cranes	60 Nos	VALF	8 Kms
		HOT Cranes	15 Nos		
		Electrical hoist	7 Nos		
2	WORK CENTRE -B	EOT Cranes	45 Nos	SPROB	9 Kms
		Pneumatic hoist	18 Nos		

3.3 The cranes to be maintained which are located in various buildings and each building is separated by a minimum distance of about 600 mtrs. The contractor shall move about a distance of 20/30 Km every day from Gate II security post. For easy mobility of his maintenance staff, the contractor shall arrange own transport.

#### 4.0 MAN POWER REQUIREMENT AND EXPERIENCE

4.1 The contractor shall mobilize the following minimum qualified and experienced maintenance personnel for the above said work.

	Category	Qualification and experience
1	Engineer-in-charge	Minimum Diploma in Mechanical/Electrical Engineering with Eight years experience in relevant filed.
2	Supervisor	Minimum Diploma in Mechanical/Electrical Engineering with Eight years experience in maintenance of EOT cranes.
3	Fitter	Minimum ITI certificate in fitter trade with minimum with Five years experience in maintenance of EOT cranes. Or Minimum 10 <sup>th</sup> class with ten years experience in maintenance of EOT cranes (Subject to approval of the Department contact Manager).
4	Electrician	Minimum ITI certificate in Electrician trade with minimum with Five years experience in maintenance of EOT cranes. Or Minimum 10 <sup>th</sup> class with ten years experience in maintenance of EOT cranes (Subject to approval of the Department contact Manager).
5	Helpers	Minimum 7 <sup>th</sup> class with Five years experience in maintenance of EOT cranes.

- 4.2 At any given time Seven (7) different groups should be working simultaneously for seven (7) different cranes and maintenance activities shall be completed as per the given schedule.

The following minimum work force required to work on seven (7) different cranes simultaneously.

Sl No	Category	No of persons	Remark
1	Supervisor	2	For both workstations
2	Fitter	7	
3	Electrician	7	
4	Helpers	14	
Total		30	

- 4.3 The work force shown above is minimum required. **Depending on the workload the contractor may have to increase the work force and work beyond office working hours as per the instructions of the Engineer-in-charge. If contractor is not deploying minimum work force, a penalty will imposed as per clause 18.0.**

- 4.4 **The Contractor shall submit the documentary evidence for the qualification and experience of the persons engaged for work.**

- 4.5 The Contractor shall furnish complete details of the manpower deployed (Number of persons, qualification and experience) to the Department for approval prior to starting of the work.

- 4.6 The contractor shall depute / identify one supervisor / Engineer-in-charge commonly for work station A & B.

- 4.7 From Department side, Engineer-in-charge / Technical assistant and senior technician will be identified for each work station.

## 5.0 WORKING HOURS

- 5.1 General working timings for the maintenance staff including Engineer-in-charge is 09.00 hrs to 17.30 hrs on working days (Monday to Saturday, Six days a week). Depending on requirement, the working hours shall be extended on mutual agreement between Engineer-In- charge of the facility and service agency.

- 5.2 By any chance if the contractors fail to complete the maintenance of cranes as per the schedule in the particular month, it is the responsibility of the contractor to mobilize additional manpower to complete the same within the stipulated time. In such case **no extra payment will be made** for that additional manpower engaged by the contractor.

- 5.3 The schedule indicated is indicative and the actual schedule will be confirmed by the contract manager/ Engineer-in-charge based on the process requirements and informed to the party sufficient time in advance for planning the resources.

## **6.0 CRANES TO BE MAINTAINED**

6.1 List of cranes to be maintained for work station - A & B are given in annexure – B.

6.2 *The offer shall be submitted separately for Periodical preventive maintenance (PPM), Annual maintenance (AM) and load testing of crane in the enclosed format in annexure-C (other type of offers or with any other conditions will not be accepted).*

## **7.0 SPARES, LUBRICANTS, MATERIALS, REWINDING CHARGES, MINOR FABRICATION WORKS AND MACHINING WORKS**

7.1 Replacement of materials, spares, components and consumables like oil, brake shoes etc., will be supplied by the Department. In case the material/spares are not in the stock with the Department, the contractor will be asked to purchase the material/spares. The contractor shall ensure competitive prices while procuring the materials from market. The same shall be reimbursed at the actual cost plus 10% handling charges. The contractor shall produce original invoice for the actual expenditure made in procuring material/spares. The payment for the same will be settled considering reasonableness of the price based on the prevailing market rates of the price at which the contractor has purchased such materials.

7.2 Rewinding of electrical motors, brake coils etc., shall be carried out by the contractor. The contractor can be billed at a rate of the actual rewinding charges and copper material cost + 10% handling charges. The contractor shall produce original bill ( labour charges + copper coil cost) for the actual expenditure made in procuring of rewinding. The payment for the same will be settled considering reasonableness of the price at which the contractor has purchased such materials.

7.3 **The contractor shall undertake fabrication works and machining works if required for any crane.** The contractor shall be reimbursed at the rate of the actual fabrication/machining charges and material cost + 10% handling charges. The contractor shall produce bill for the actual expenditure made for fabrication/machining. The payment for the same will be settled considering reasonableness of the price based on the prevailing market rates. The decision of the contract manager / Engineer-in-charge is final and binding on the contractor.

## **8.0 MINOR / MAJOR WORKS**

Removing and bringing down any defective equipment/components such as motors, gearbox, brakes, shafts, wheels, couplings etc., from EOT crane for further repair is the responsibility of the contractor. The contractor shall also re-assemble the parts immediately after the repair. All the machining and other related manufacturing works would be carried out by the Department. The Department will provide all replacements. If it is minor repair work like filing, fitting ect., shall be carried out by the contractor free of cost. **For the major works, charges are applicable as per the clause 9.0. The decision of the Engineer-in-charge on the nature of the repair (either major or minor) will be final.**

## 9.0 MODIFICATION / RECTIFICATION WORKS

In addition to the scope of work stated in 1.0, the contractor may be entrusted with any major modification/rectification works. **The contractor shall undertake necessarily modification/rectification works. The contractor should provide additional support for the major modification/rectification works.** The contractor will be paid based on the actual manpower utilized and equipment used. To arrive at the actual cost of man power and equipment used for the works, the contractor shall provide the hourly cost break-up for the following. **The estimated manpower indicated in the Annexure – C is only indicative and actual manpower may vary based on the site conditions.** The offer shall be considered as per the enclosed format in Annexure-C. **The format shall be attached along with the price bid in the e-procurement**

1. Supervisor
2. Fitter
3. Electrician
4. Welder
5. Unskilled labour
6. Welding set (welding electrodes will be supplied by the Department)
7. Gas cutting set including consumables Oxygen cylinder and Acetylene cylinder which should be arranged by the contractor.

**The same rates shall be applicable for the major works and Stand by duty carried out as per the clauses 8.0 and 10.0.**

## 10.0 STAND BY DUTY FOR ADDITIONAL WORKS

*During the critical operations, the contractor shall provide manpower on standby duty and deploy them as and when needed. The stand by duty charges will be paid as per clause 9.0 based on the actual manpower utilized.*

- 11.0** *In case of any crane, load testing, PPM and AM need to be done additionally on request of Department, the contractor shall undertake such work at the rates quoted and payment will be made accordingly as per clause 6.2.*

## 12.0 TRANSPORTION AND ACCOMMODATION

- 12.1** The Contractor shall arrange his own conveyance / transport for his team and materials etc. Contractor must have a vehicle for each work center separately (Minimum three numbers of vehicles for both work centers) for the transportation of his staff in Sriharikota. It must be noted by the contractor that his staff shall travel about 20 to 30 km daily to reach various work spots. The Department will not provide any transport to the personnel of the contractor.

- 12.2** The Contractor shall make his own arrangements for lodging and boarding of his maintenance team during the period of contract. Contractor will not be permitted to construct any shed inside the range for the purpose. ***Accommodation may be arranged subject to availability, on chargeable basis.*** Private accommodation is available at Sullurupeta but not in SDSC SHAR, Sriharikota (Sullurupeta is 18 kms from Sriharikota).

## 13.0 GENERAL

- 13.1 *Tenderer shall have a minimum of five years of experience in maintaining at least 40 Nos of EOT cranes in a year out of which at least few higher capacity cranes (i.e. 50t or above) and furnish the list of clients along with Work orders / Purchase orders (Government & private) along with bid .In addition, furnish the TAN and PAN numbers. The bidder should have annual turnover of not less than 3 crores per year during any of the last three financial years ending with 31.03.2014.*
- 13.2 The Contractor shall register the list of all his items, tools, and equipment etc., brought inside the range every time at the security gate. Department will provide place to keep a lockable storage cabinet at each Work center for keeping the tools. The Contractor cannot make any claim on the Department for the loss of his instruments, tools etc.
- 13.3 The Contractors shall indemnify the Purchaser/and/or any Officer, employee or any assignee thereof harmless from any loss, damage, liability or expense, on account of damage to the property or environment and injuries including death, to any persons not limited to, employees or agents of the Department, employees of the contractor or its sub-contractors, and all other persons performing any part of the work here under any occurrence caused by any act of commission / omission of the contractor or his sub-contractors or any of them. The contractor shall at his expense defend any suits or proceedings brought against the Department on account thereof and shall satisfy all judgments and pay all expenses which may be incurred by or rendered against them, or any of them in connection therewith. **The Contractor shall fulfill all the obligations required under different acts related to labour and as amended from time to time. The Contractor shall ensure minimum wages as per relevant act.**
- 13.4 *The contractor shall insure him and all his staff against accidents for the duration of the contract period at his cost. The contractor shall produce proof of insurance cover before starting the work at site in SDSC AHAR, Sriharikota. The Department will not be responsible for any type of injury including death caused to the contractor's personal during the work. The contractor shall fulfill all the obligations required under workmen compensation act amended from time to time.*
- 13.5 The Department will not accept any liability for the contractor or his sub-contractors, their officers, employees or agents, servants or assigners or any of them or for their property while on the premises or in the service of the Department.
- 13.6 In case of any equipment or property of the Department is damaged by the contractor or his employees/agents, the same shall be rectified "free of any charge" by the contractor within the period specified by the Engineer-in-charge. If the repair is not carried out within the specified period, the contractor shall pay immediately the amount specified by the Department for the damage otherwise the amount will be recovered from the payments due to the contractor.
- 13.7 The offer shall include all the necessary labour, materials, equipment, transportation services and incidentals connected with the servicing and maintenance of the cranes.
- 13.8 Some of the cranes may be deleted from the scope of work during the contract period. Similarly, some new cranes may be included in scope. The contractor shall undertake

servicing of such additional cranes at the same rates available in the contract for similar capacity of cranes.

- 13.9 Before quoting the contractor may visit the site for getting first hand information on the site conditions, the crane locations and other aspects.
- 13.10 The offer for the servicing and maintenance shall be in the following format only. (Other type of offers or offer with any other conditions will not be accepted). The format is enclosed in annexure –C.

Sl. No	Crane Code No	Capacity	Rate for Periodical Preventive Maintenance (PPM) (Once in a year)	Rate for annual servicing (Once in a year)	Rate for load testing (Once in a year)

- 13.11 On receipt of the purchase order, the contractor shall submit the time schedule of maintenance of all the cranes covered under this contract to the Department for approval prior to starting of the work.
- 13.12 If there is any dispute, on the quality of the work or schedules, the decision of the Engineer in charge of the respective workstation is final and binding on the contractor.
- 13.13 ***The contractors staff shall wear Personnel Protective equipment (PPE) such as helmets, cotton uniform, safety belts, shoes, safety goggles etc.,***
- 13.14 The contractor shall ensure that all his workers are wearing Cotton Uniform, safety jackets and Leather Shoes at work site.
- 13.15 The contractor should not remove or engage any person without the knowledge and concurrence of the Department Engineer-in-charge of respective work site.
- 13.16 The contractor should abide by the statutory provisions, rules and regulations of Government of India and Government of Andhra Pradesh in force from time to time for his personnel including ensuring of minimum wages, remittance of PF, insurance, medical allowance etc.,. The contractor shall furnish the documentary proof to that effect to the satisfaction of the department as and when demanded. The proof of remittance of PF subscription and the employee’s contributions etc. shall be submitted to the contract manager from time to time.
- 13.17 It is the responsibility of the contractor / his staff to maintain the cleanliness of the maintenance bay, office working premises etc.
- 13.18 The contractor should mobilize his team within 10 days from the date of receipt of the purchase order.
- 13.19 The contractor should deploy the maintenance staff with age not exceeding 60 years

13.20 The tenderer shall give a minimum validity period of six months from the tender due date for the bids. The offer shall include all necessary labour, materials equipment, transportation charges and incidental charges connected with the maintenance.

13.21 Before quoting, the contractor may visit the site if required for getting firsthand information on the site conditions, the cranes location and other aspects.

### 13.22 CONSUMABLES

Minimum quantity of consumables for period of six months per work centre to be brought for servicing and maintenance of cranes is listed below (i.e., four times the quantities indicated below is required per year for two centers.

Sl. No	Description	Qty
1	Cotton waste	150 Kgs
2	Shellac	36 Nos
3	Carbon tetra chloride	20 Litres
4	Kerosene	50 Litres
5	Compressed asbestos gasket 0.5 mm thick	4 Sq.m
6	Emery sheets, Rough	50 Nos
7	Emery sheets, Smooth	30 Nos
8	Insulation tape in three different colours	24 Nos
9	Teflon tape	10 Rolls
10	M seal	1 Kg

However, any additional quantities consumables if required have to be borne by the contractor.

### 14.00 ENTRY PASSES FOR CONTRACTOR'S STAFF

The contractor and his staff need photo entry passes issued by the department to enter into work spots at SDSC SHAR, Sriharikota. For this purpose the contractor shall provide 2 Nos of passport size photographs of all his staff and address proof, conduct certificate from local authorities (Police verification certificate /MLA/MP/MRO ect) to the department before starting of the work. The contractor should abide by the security restriction imposed by the department for his personnel, tools and materials from time to time.

Contractor personnel if removed from rolls, the entry passes shall be returned to the Department immediately with a covering note. Non-surrender or misplacement of any entry pass shall be charged from the contractor at the rates prescribed by the Department from time to time.

15.0 As SDSC SHAR is a highly restricted and sensitive area, service mechanics planned for deputation shall have high integrity and shall be certified by the Contractor.

16.0 **SECURITY DEPOSIT**

The contractor shall deposit a sum equivalent of 10% of annual cost of maintenance as Security deposit in the form of bank guaranty or by demand draft valid till the contract period. In case cancellation of contract due to default contractor, the security deposit will be forfeited (in case of bank guaranty the same will be encashed). In case of successful completion of contract, the security deposit will be refunded without any interest.

17.0 **PAYMENT TERMS**

17.1 Payment shall be made once in a month for the work carried out by the contractor.

17.2 For arranging payments, the contractor shall submit invoice to the Department Engineer in charge of respective work station for the following works

- Maintenance works attended
- Spare parts supplied
- Stand by duty
- Major rectification / Major modification works

17.3 Disbursement of wages for the workers shall be made on a working day at the work premises and during the working time and on a date notified in advance in the presence of the authorized representative of the principal Employer as authorized by the Contract Manager.

17.4 Income Tax deduction at source will be done from the payments of the contractor as per IT rules in force and TDS will be provided along with the payment

18.0 **RECOVERY DUE TO ABSENTEESIM**

18.1 With regard to maintenance and supervisory staff, the absenteeism for a month shall not exceed 8% of the total man-days in each category. (Total No of staff in particular category x No of working days for the particular month x 0.08). If the absenteeism exceeds 8%, a proportionate amount as per the rates quoted for stand by duty per day will be deducted from the bill.

18.2 In case of any damage to the equipment or tools due to the negligence of the personnel of the contractor during the course of maintenance the same will be rectified to the satisfaction of the Department at no extra cost.

19.0 **EARNEST MONEY DEPOSIT (EMD)**

1. The tenderer shall remit Rs. 1 lakh as earnest money deposit (EMD) in the form of demand draft (DD) with the tender, failing which the tender will not be considered.
2. The EMD shall be remitted by a DD from any nationalized bank in favour of Accounts officer Satish Dhawan Space Centre SHAR, payable at SBI, Sriharikota.
3. Cheque will not be accepted towards EMD.
4. EMD by the unsuccessful tenderer will be refunded after the finalization of tender. EMD shall not bear any interest.

5. EMD of the successful tenderer will be refunded after receipt of performance security.
6. DD number and other reference details shall be filled on-line, and the original DD shall be sent before the tender due date to head, purchase & stores, Satish Dhawan Space Centre SHAR, ISRO, Dept. Of Space, Govt. Of India, Sriharikota – 524124.

## 20.0 CANCELLATION OF CONTRACT

*In case the contractor did not carry out the work as per terms and conditions of the contract or his services are not satisfactory, the contract will be cancelled with advance notice of two weeks.*

- 21.0 The scope of work cannot be split into parts, as the resources for executing the contract are shared over a period of execution of contract uniformly. Tenderer shall complete the maintenance of cranes as per the schedule given by the Department in a year. As per the scope of the tender the three works viz. maintenance, modifications and stand-by duty and supply of spares are not separable.

## 22.0 INFORMATION TO BIDDERS

- 22.1 The quotation should be in parts

PART – 1 : TECHNICAL AND COMMERCIAL BID  
PART-2 : PRICE BID

### 22.2 **BID SUBMISSION**

Bids duly filled in by the Bidder should invariably be submitted as stipulated in the Letter inviting bid. Bids shall be submitted in the following manner.

#### **Part – I : Un priced Techno-Commercial Part of the Bid for the Work**

1. Complete Techno–commercial part of the bid shall be filled online in the “vendor Specified Terms’ form of the e-tender. Any documents related (demand draft for tender fee & EMD ), technical literature, guarantee / warrantee certificates and any other relevant documents as per the tender shall be scanned in lower resolution format and uploaded to the e-tender under ‘Documents solicited from Vendor’ form only in ISRO e-procurement portal ( <https://eprocare.isro.gov.in> ). In case if the space for uploading is not sufficient, hard copy of the balance documents shall be submitted before due date.

2. The following enclosures shall be attached along with the techno-commercial bid as attachments

#### **1. Confirmation to the pre-qualification criteria**

2. Confirmation/ Compliance statement as per Annexure-D
3. Any other techno-commercial information related to the tender
4. Confirmation of submission of price bid as per Annexure-C along with ‘Price Bid’ (Part-II)

Envelope of technical bid shall be marked with following:

<b>PART-I TECHNO-COMMERCIAL BID</b>	
<b>Name of client</b>	: <b>SatishDhawan Space Centre SHAR</b> Indian Space Research Organisation
<b>Title of the proposal</b>	:
<b>Due date and time of the opening</b>	: <b>DD/MM/YYYY</b>
<b>From (Name of the bidder with address)</b>	:
<b>To:</b>	<b>Head, Purchase &amp; Stores</b> <b>SatishDhawan Space Centre SHAR</b> <b>ISRO, Dept. of Space</b> <b>Govt. of India</b> <b>Sriharikota – 524124,</b> <b>SPSR Nellore Dist,</b> <b>Andhra Pradesh, India</b>

The deviation statement and checklist shall be filled online, without which the bid will not be considered.

#### **Part – II : Price Part of the Bid for the Work**

Price bid shall be filled in the on-line 'price bid' form of the e-tender only in ISRO e-procurement website <https://eprocure.isro.gov.in> . The cost of spares and other prices shall be filled in the respective forms available on-line in the e-portal. Any other terms and conditions given in this part shall not be considered and if insisted upon by the Bidder, bids are liable for rejection.

- a) SDSC SHAR may open Part – I of the bid on the due date of opening subject to meeting the minimum evaluation criteria. Price Bids (Part-II) of technically and commercially acceptable offers shall be opened at a later date.
- b) SDSC SHAR reserves the right to reject any or all the Bids without assigning any reasons thereof.
- c) The break-up of prices as per Annexure-C (with prices) shall be enclosed along with price bid.
- d) ***Any bids / offers with price details in Techno-Commercial Offer (Part –I) shall be rejected.***
- e) SDSC SHAR reserve rights to place order for either full quantities of all items or partial quantities and partial items based on the unit rates available.

**23. PRE-QUALIFICATION CRITERIA**

*Bidder shall meet the following qualification criteria and bidder shall submit all the relevant documents supporting the qualification criteria. Bids of those who don't meet the criteria will not be considered for evaluation.*

- a. Tenderer shall have a minimum of five years of experience in maintaining at least 40 Nos of EOT cranes in a year out of which at least few higher capacity cranes ( i.e. 50t or above) and furnish the list of clients along with copies of Work orders / Purchase orders (Government & private) along with Techno-Commercial bid (Part - I) .*
- b. The bidder should have annual turnover of not less than 3 crores per year during any of the last three financial years ending with 31.03.2014.*

**NATURE OF SERVICING AND MAINTENANCE TO BE CARRIED OUT  
PERIODICALLY ONCE IN A YEAR BASIS**

**1.0 PERIODICAL AND PREVENTIVE MAINTENANCE: ONCE IN A YEAR WORKS  
TO BE CARRIED OUT FOR EACH CRANE:**

**1.1 BRIDGE RAILS (L.T & C.T) WITH CLAMPING SYSTEM:**

1.1.1 Check the fastening of crane rails and clamps and rectify, if required.

1.1.2 Check rail wear on top and sides and report any abnormality.

**1.2.0 GANTRY GIRDERS ON BUILDING & CRANE**

1.2.1 Check the foundation bolts, splices, loose bolts or missing bolts/rivets and for cracked welds and Splices and rectify wherever required.

**1.3.0 END CARRIAGE (END TRUCKS):**

1.3.1 Check the overall condition of end carriage and report any cracks in the welds or abnormal wear of rail and wheels. Rectify wherever required.

1.3.2 Rail sweeps to be checked and fixed properly, if needed.

1.3.3 WHEELS: Check for the non-uniform wear, correct the Wheel axle for proper alignment.

1.3.4 BUMPERS: To be checked and rectified if there is any defect.

1.3.5 End carriages and the bridge girder fasteners are to be checked and properly tightened

1.3.6 Attachment to end carriages – loose or missing rivets or bolts or broken/cracked welds to be Checked and rectified.

**1.4.0 DRIVE SYSTEM (L.T & C.T):**

1.4.1 Check the tightness of the bolts of the motor base, Plummer blocks, and its supports, brake unit Supports, gearbox supports, L.T & C.T. Shaft connecting the wheels etc., and rectify, if required.

1.4.2 Check the coupling condition and tightness of the key.

1.4.3 Check the Plummer block bearing condition.

1.4.4 Check the gearbox for leakage of oil, loose bolts or cracks in the gearbox, observe the noise level and report before rectification.

**1.5.0 HOIST DRIVE SYSTEM MAIN/MICRO/AUXILIARY WHEREVER APPLICABLE:**

1.5.1 Check the free rotation of the hook

1.5.2 Check the free movement of snatch block

1.5.3 Check for the wear and free rotation of pulleys.

- 1.5.4 Check tightness of fasteners at the end fixing of wire rope on rope drum and also rope drum fixing system.
- 1.5.5 Check the freeness of equalizer pulley system.
- 1.5.6 Check the tightness of plummer block assembly.
- 1.5.7 Check all the fasteners for proper fixing of motor, gearboxes, plummer blocks, brake units etc.
- 1.5.8
  - i) Check the coupling condition.
  - ii) Check the tightness of the key.
- 1.5.9 Check the plummer block bearing condition.
- 1.5.10 Check the gearbox for leakage of oil, loose bolts, or cracks in the box, observe the noise level and report before carrying out repair works.

#### **1.6.0 BRAKE UNITS: (FOR L.T & C.T AND HOIST MOTIONS):**

- 1.6.1 Brake shoe connecting linkages shall be checked and to be adjusted if required.
- 1.6.2 Adjust the spring tension for proper braking condition.
- 1.6.3 Check the condition for brake liner and replace, if require.
- 1.6.4 In electro-magnetic (E.M) type of brakes, ensure that the plunger inside the core shall be atleast 1/3 of the core depth for proper operation.
- 1.6.5 Check the brake coil guide assembly (EM Brake) for proper plunger operation (for all motions).
- 1.6.6 In case of thruster brakes, check for oil condition and level and rectify, if require.
- 1.6.7 Brake currents are to be measured and recorded wherever the brakes are adjusted. (Before and after the adjustments)

#### **1.7.0 LUBRICATION**

##### **1.7.1 GEARBOXES (FOR L.T., C.T. AND HOIST MOTIONS):**

Check the condition of oil and replace if required.

##### **1.7.2 CENTRALISED LUBRICATION SYSTEM**

All grease nipple and oil points shall be packed with lubricant.

- 1.7.3 Lubrication of all mechanical components (viz., hook, pulleys, rope, brake, gears, gearboxes, plummer blocks, wheels and axels, coupling, bushes etc.,) topping up or replacing lubrication oil wherever required. (Galvanized hard core wire ropes should not be lubricated).
- 1.7.4 If the pipelines of the centralized lubrication system are blocked, it shall be repaired before the application of lubricants.

### **1.8.0 LIMIT SWITCHES; (FOR L.T.,C.T. AND HOIST MOTIONS):**

1.8.1 Check all operation of all limit switches for L.T., C.T. and Hoist (upper & lower) and also for gravity limit switch and rotary limit switches.

1.8.2 Check the rotary limit switch cam system.

### **1.9.0 ELECTRICAL SYSTEMS**

1.9.1 Check the free movement for guide, guide rail /rollers, push rod, connecting chains, clamping of all trailing cable units and rectify the defects, if any.

#### **1.9.2.0 INSPECTION OF INCOMING PANEL AND CONTROL PANELS;**

1.9.2.1 Tighten all terminals inside the panel.

1.9.2.2 Check the correct fuse ratings.

1.9.2.3 Check the over load relay settings (set over load relay to full load current of the motor)

1.9.2.4 Check the chattering and sluggish operation of power contactors and ISR relays.

1.9.2.5 Check the earthing of the motors for proper tightness and contact.

1.9.2.6 Ensure all panel door bolts are fixed.

1.9.2.7 Check and tighten all electrical connections in the motors.

1.9.2.8 Clean the terminal blocks of motors, brakes, junction boxes, limit switches etc.,

1.9.2.9 Check the limit switches functioning for all motions.

1.9.2.10 Check the brake coil operation for non-humming condition and proper closing.

1.9.2.11 Check the brake coil resistance.

1.9.2.12 Roller actuation of the limit switches shall be checked manually.

1.9.2.13 Check all electrical connections of the pendant.

1.9.2.14 Check all push button's actuation.

1.9.2.15 Check for proper operation for all motions of pendant push buttons.

### **1.10.0 CLEANING**

1.10.1 After all the works are completed, remove tools, tackles, wastes, oilcan, grease etc.,

1.10.2 Secure all covers after maintenance.

1.10.3 Clean the crane, L.T., Girder, walkways etc thoroughly.

## **2.0 ANNUAL SERVICING AND LOAD TESTING ONCE IN A YEAR**

In addition to the work mentioned under periodical preventive maintenance (from point 1.0 to 1.10.3), the following works are also to be carried out for Annual Servicing and Load testing for each crane.

### **2.1.0 L.T. & C.T. DRIVE SYSTEMS**

2.1.1 All couplings are to be removed, checked and refitted.

- 2.1.2 All plummer blocks are to be opened and inspected thoroughly, oil seals / gaskets etc., shall be changed, if require.
- 2.1.3 All gearboxes have to be opened and inspected thoroughly, Oil seals/gaskets etc., shall be changed, if required.
- 2.1.4 Alignment of all drive chains shall be checked and corrected, if required.

### **2.2.0 HOIST DRIVE SYSTEMS (AUX. AND MAIN):**

- 2.2.1 All couplings are to be removed, checked and refitted.
- 2.2.2 All plummer block covers are to be removed, bearings are to be checked and refitte.
- 2.2.3 All gearboxes have to be opened and inspected thoroughly. Oil seals/gaskets etc., shall be changed if required.
- 2.2.4 Alignment of all drive chains including rope drum shall be checked and corrected, if required.

### **2.3.0 INSPECTION OF WIRE ROPES**

- 2.3.1 Check the hoist rope reeving, rope wear, twist, kink, break, interference with any other member etc., while in operation. New rope is to be laid, if the old wire rope is required to be replaced.
- 2.3.2 Check the condition of hoist drum (rope drum) bolts tightness, bearing condition, grooves and ridges. Replace with new ones, if required.
- 2.3.3 Check the general condition of bull gear and connecting gear train. Replace with new ones, if required.

### **2.4.0 BRIDGE RAILS (L.T. & C.T.)**

- 2.4.1 Check and align the rails, if required.
- 2.4.2 Check the end stoppers and rectify, if required.

### **2.5.0 BRIDGE GIRDERS**

- 2.5.1 Check the welding condition, rivet or bolted joints throughout the length of the girder and rectify, if required.
- 2.5.2 Check the splice joints for any abnormality and rectify, if required.
- 2.5.3 Check walkway plates and hand rails and rectifies, if found defective.

### **2.6.0 ELECTRICAL SYSTEMS:**

- 2.6.1 Inspection of Incoming panel and Control Panels:
- 2.6.2 Clean power contractors in the incoming panels and replace the contractors if required.
- 2.6.3 Clean the ISR relays and power contractors, magnetic core etc.,
- 2.6.4 Measure the insulation resistance of all power and control cable connected to motors and motor windings.
- 2.6.5 Measure the winding resistance of motors.

- 2.6.6 Check the electrical motor bearing condition and replace if required.
- 2.6.7 Check the condition of fan blades of motors and tighten all the fasteners.
- 2.6.8 Measure insulation resistance value of all cables including pendant cables.
- 2.6.9 Check the condition of electrical trailing cables, L.T.C.T., down shop leads etc., and rectify, if required.
- 2.6.10 Check the cable glands for proper condition and replace, if necessary.
- 2.6.11 Check loose connection inside the limit switches and tighten them, if necessary.

## **2.7 LOAD TESTING**

- 2.7.1 After carrying out the annual servicing and maintenance of the crane and satisfactory completion of the written report, each crane shall be load tested in the presence of the Engineer-in-charge. Any test which is to be repeated as per instruction of the Engineer-in-charge shall be carried out by the contractor at no extra cost. Mobilization of dead weights for load testing from facility to facility will be at your scope. The department will supply the dead weights required for the load testing and trailers for transporting dead weights from facility to facility.
- 2.7.2 The minimum tools and accessories required to carry out the load test as given in the following list have to be brought by the contractor for each work centre.
  - a. Measuring tape, 50 meters
  - b. Plumb-bob
  - c. Piano wire
  - d. Steel rule, 1 meter
  - e. Stop watch - One No
  - f. Try Square
  - g. Multi meter
  - h. Tong tester for current measurements
  - i. Meggar etc.,

Note: all the instruments used should have been calibrated before use and the certificate to this effect should be shown to the Engineer-in-charge, if demanded. If the Engineer-in-charge demands re-calibration of any item, it has to be carried out immediately.

- 2.7.3 The contractor shall follow the procedure laid down by the Engineer-in-charge to carry out the load test.
- 2.7.4 The currents of all the motors and brakes as well as the speeds of LT, CT and Hoist motions are to be measured and recorded in the prescribed format.
- 2.7.5 The deflection measurements shall also be carried out and recorded.

## CRANES OF WORK CENTRE - A (VALF)

Sl no	Crane Code	Facility	Capacity / SWL in tones	Type	Height of Lift (m)	SPAN (m)	Bay length (m)
1	MST-1	FLP / MST	60/15	EOT(F)	63	12	14.5
2	MST-2	FLP / MST @	5	EOT(F)	58	12	10
3	SPB-1	FLP / SPB	25	EOT	18	21	30
4	SPB-2	FLP / SPB	25	EOT	14	20	50
5	L-40 (new)	FLP / L-40	30	EOT	12	19	50
6	PSOM-XL	FLP / PSOM-XL	30	EOT	14	19	60
7	L-110-SF	FLP / L-110	30	EOT	16	19	50
8	SSPF-1	FLP / SSPF	15	EOT(F)	22	16	30
9	SSPF-2	FLP / SSPF	5	EOT(F)	10	6	6
10	SSPF--3	FLP / SSPF @	7.5	EOT(F)	10	12	12
11	HSF	FLP / HSF	15	EOT	10	16	20
12	TC-1	FLP / TCX	15	EOT	13	16	30
13	TC-2	FLP / TCX	5	EH	8	-	17
14	CSF	FLP / CSF	10	EOT	13	18	44
15	SMPF	FLP / SMPF	60 / 15	EOT(F)	15	16	30
16	USPF	FLP / USPF @	25	EOT(F)	15	16	30
17	TC-2A	FLP / TCX-2A @	25	EOT	18	18	40
18	TC-2B	FLP / TCX-2B @	10	EOT	11	10	18
19	FHSB	FLP / TCX @	20	EOT	9	19	44
20	SB-1	FLP / MAHAN	3	HOT	5	10	15
21	GLR	FLP / LSSF	3	HOT	5	11	20
22	CB-1	FLP / LSSF	3	HOT	5	10	20
23	CGSF	FLP / LSSF	10	EOT	8	14	40
24	CGSS-1	FLP / LSSF	7.5	HOT	5	11	30
25	CGSS-2	FLP / LSSF	3	HOT	8	6	14
26	SAU	FLP / LSSF	7.5	EOT	8	15	40
27	LCC-1	RO	7.5	EOT	10	6	6
28	LCC-2	RO	3	EOT	10	6	6
29	LCC-3	RO	5	EOT	10	15	20
30	LCC-4	RO @	5	EOT(F)	15	16	30
31	SP-1A -ULR	RO @	20	EOT	15	12	21
32	SP-1A-MAT	RO @	15	EOT	15	10	21
33	SP-1A-CR	RO @	15	EOT	15	15	21
34	MSS-1	ASLV	15/3	EOT	30	6	18
35	VIB-1	ASLV	16	EOT(F)	10	20	40
36	VIB-2	ASLV	16	EOT(F)	10	14	40
37	W/S - 2	ASLV	3	HOT	5	10	10
38	SSAB	SLP / SSAB @	400 / 60	EOT(F)	44	32	44
39	VAB - 1	SLP / VAB @	10	EOT(F)	12	20	33
40	VAB - 2	SLP / VAB @	200 / 30	EOT(F)	72	25	33
41	UT-TC	SLP / UT	10t	EOT(F)	72	20	-
42	SPF-2A	SLP / SPF @	30	EOT(F)	22	15	16
43	SPF-2B	SLP / SPF @	20	EOT(F)	11	18	20

Sl no	Crane Code	Facility	Capacity / SWL in tones	Type	Height of Lift (m)	SPAN (m)	Bay length (m)
44	SPF-2C	SLP / SPF @	20	EOT(F)	22	19	36
45	SPF-2D	SLP / SPF @	30	EOT	22	19	36
46	DCP	SLP / DCP	20	EOT(F)	70	6	-
47	CGSS- 3	SLP / LSSF	12.5	EOT	8	13	74
48	CGSS- 4	SLP / LSSF	7.5	HOT	5	10	21
49	GRLP	SLP/LSSF	3	HOT	-	-	-
50	GRLC	SLP/LSSF	3	HOT	-	-	-
51	SRC-1	SRF	5	EOT(F)	6	10	20
52	SRC-2	SRF	3	HOT	5	10	10
53	RTR	SRF	5	EH	5	13	30
54	CTF	SRF / LSSF	15	EOT	5	14	35
55	W/S - 1	STEX / W/S	3	EOT	4	10	40
56	6C-1	STEX / Test Bed	175/50	EOT	28	20	120
57	6C-2	STEX / Test Bed@	5	EOT(F)	6	17	53
58	6B-1	STEX / Test Bed	12.5	GANT	10	14	20
59	6B-2	STEX / Test Bed	1	EH(F)	5	-	30
60	2CR-1	STEX / 2CR @	50/5	EOT(F)	15	13	25
61	PSPF	STEX / PSPF	60/20	EOT	18	15	22
62	VTF-1	STEX / VTF/ B-4	10 / 2	EOT(F)	9	10	34
63	VTF-2	STEX / VTF /B-4	3	EH	15	-	25
64	PPTF	STEX / PPTF/B-5	3	EH	9	8	15
65	THTF-1	STEX/ THTF/B-8	10	EOT	4	10	-
66	THTF-2	STEX /THTF/ 2G	5	EH	5	10	15
67	2A	STEX / 2A	5	EH	4	10	15
68	2A-1	STEX / 2A	15	EOT	10	9	20
69	2A-2	STEX / 2A	15	EOT	15	9	10
70	HSB-1	STEX / 2A	10	EOT	9	9	30
71	S200SHF	STEX / 2A	30	EOT	16	19	50
72	HAT-1	STEX / HAT	7.5	EH	8	12	30
73	HAT-2	STEX / HAT	7.5	HOT	8	12	30
74	HAT-3	STEX / HAT	3	HOT	5	7	10
75	AATF-1	STEX / ATF	3	HOT	5	5	-
76	AATF-2	STEX / ATF	3	HOT	5	5	-
77	AMPF-1	STEX / AB @	0.5	EOT(F)	4	5	6
78	AMPF-2	STEX / AB @	0.5	EOT(F)	4	5	6
79	AMPF-3	STEX / DAB @	0.5	EOT(F)	2	5	9
80	AMPF-4	STEX / DAB @	0.5	EOT(F)	4	5	7
81	CALB-1	STEX / B-1	3	HOT	13	12	15
82	CALB-2	STEX / 2D	3	HOT	13	12	5

### CRANES OF WORK CENTRE - B (SPROB)

Sl no.	Crane Code No.	Facility	Capacity / SWL in tones	Type	Height of Lift (m)	Span (m)	Bay length (m)
1	08/114/01	CURING COMPLEX	30	EOT(F)	15	15	22
2	08/114/02	CURING COMPLEX	1	EOT(F)	5	5	6
3	08/115/01	CASTING STORES	7.5	EOT	8	12	21
4	08/116/01	CAST CURE	60/15	EOT (F)	10	15	28
5	08/117/01	CAST CURE @	60/15	EOT(F)	10	15	28
6	08/120/01	AL.PROCESSING	1	EOT(F)	6	7.5	8
7	08/122/01	AGNI HARDWARE PREPARATION	0.5	EOT	4	4	5
8	08/125/01	R.V.D.2	3	EOT (F)	8	8	8
9	08/128/01	AUTOCLAVE BAY	15	EOT	8	20	35
10	08/128/02	SAND BLAST BAY @	15	EOT	8	20	35
11	08/128/03	VTM BAY	20	EOT (F)	9	20	35
12	08/130/01	CLEANING BAY	7.5	EOT(F)	5	6	32
13	08/130/02	CLEANING BAY	10	EOT (F)	8	10	18
14	08/130/03	NEW BOWL CLEANING BAY	20	EOT	7.25	11.1	30.2
15	08/132/01	V.MIXER 2 – MR	20	EOT(F)	9	8	14
16	08/132/02	V.MIXER 2 - FR	3.5	EOT(F)	5.5	6	14
17	08/133/01	WORKSHOP	10	EOT	5.6	21	27
18	08/135/01	V.MIXER 1 - MR	15	EOT(F)	10	8	10
19	08/135/02	V.MIXER 1 - FR	3.5	EOT(F)	11	8	10
20	08/136/01	AP BIN STORAGE BAY	3	EOT (F)	6	8	10
21	08/138/01	H BORING FACILITY	20	EOT(F)	8	12	10
22	08/139/01	INHIBITION FACILITY	50/10	EOT(F)	7	15	20
23	08/140/01	PROPELLANT MACHINING	50	EOT(F)	10	18	22
24	08/142/01	CASTING / JET CUTTING	30	EOT(F)	15	20	50
25	08/142/02	AGNI DECORING	0.5	EOT(F)	6	10	12
26	08/145/01	N.D.T. - 9 Mev @	40	EOT(F)	8	17	24
27	08/145/02	N.D.T - 15 Mev	50	EOT(F)	10	19	24
28	08/151/01	MAGAZINE - 1	20	EOT(F)	7	12	30
29	08/152/01	MAGAZINE - 2	50/10	EOT(F)	10	15	30
30	08/160/01	BOWL STORAGE	12	EOT(F)	7	11	40
31	08/161/01	V.MIXER.3 – MR	20	EOT(F)	8	9	14
32	08/161/02	V.MIXER 3 - FR	3	EOT(F)	12	7	19
33	08/162/01	MAGAZINE XL STORAGE BAY - 3	25	EOT (F)	10	18	45
34	08/162/02	MAGAZINE XL HARIDWARE BAY - 3	2	EOT	4	8	19
35	08/164/01	MAGAZINE - 4	50/10	EOT	10	16	42

Sl no.	Crane Code No.	Facility	Capacity / SWL in tones	Type	Height of Lift (m)	Span (m)	Bay length (m)
36	08/165/01	NEW AGNI CARTON FACILITY	0.5	EOT	7	8	15
37	08/166/01	GROUND OVEN FACILITY	60/15	EOT	10	16	42
38	08/167/01	AL POWDER STORAGE	1	EOT	4.5	9.9	28.7
39	08/168/01	AP BIN STORAGE	3	EOT	5.6	10	27.5
40	08/169/01	VMIXER-4 - MR	20	EOT	7.25	11.2	14
41	08/169/01	VMIXER-4 - FR	3.5	EOT	12.25	13.9	12
42	08/170/01	V MIXER-5 – MR @	30	EOT	9	10.1	19.3
43	08/170/2	V MIXER-5 - FR	7.5	EOT	17	8.4	18.5
44	08/171/01 **	NEW MAGAZINE -5@	50/10	EOT	10	16	51
45	08/172/01**	NEW AP DRYING	7.0	EOT	10	16	18
46	08/113/01	AP STORAGE FACILITY	1	PH	5	10	25
47	08/118/01	S.MIXER1	2	P.H	5	6	6
48	08/118/02	S.MIXER 2	2	P.H	5	6	6
49	08/120/02	AL.PROCESS EXTN	1.5	P.H	7	8	Fixed Beam
50	08/120/03	HTPB	1	P.H	7	8	8
51	08/122/02	S.MIXER 1	1	P.H	5	6	6
52	08/122/03	S.MIXER 2	1	P.H	5	6	6
53	08/122/04	NEW MIXER	2	P.H	5	6	6
54	08/125/02	AP DRUM LIFT	1	P.H	7	8	Fixed Beam
55	08/125/03	RVD 1	1.5	P.H	7	8	21
56	08/125/04	R.V.D 1, AP DRUM LIFT	3	P.H	7	8	21
57	08/126/01	GRINDING BAY AP RECEIVING BAY	1.5	P.H	7	8	Fixed Beam
58	08/126/02	PULSAIR BAY	1	P.H	7	8	Fixed Beam
59	08/127/01	AMBILINK ROOM	1	P.H	7	8	Fixed Beam
60	08/129/01	AL. STORAGE	2	P.H	6	8	10
61	08/130/03	PLUNGER CLEANING	1	P.H	5	6	Fixed Beam
62	08/142/03	3 M CHAMBER	2	P.H	5	10	12
63	08/142/04	AGNI GRAIN CASTING BAY	2	P.H	4	5	8

**Note:** 1. (F) indicated in the bracket next to type of cranes indicate Flameproof.

2. Maintenance of cranes ref. to Sl. No 44.45 of the above list under workstation (B) - SPROB will commence from July, 2016.

3. @ indicated next to facility of cranes indicate VVVF drive crane

**Annexure-C**

1. Cost break-up for maintenance of Cranes for **Work Centre – A (VALF)**  
**(Refer condition No: 13.10 of the terms & conditions)**

Sl no	Crane Code	Capacity / SWL in tones	RATE FOR ONE SERVICING IN A YEAR (IN RUPEES)			
			PPM (Once in a year) (1)	Annual Servicing (Once in a year) (2)	Load test (Once in a year) (3)	Cost per year (1+2+3)
1	MST-1	60/15				
2	MST-2	5				
3	SPB-1	25				
4	SPB-2	25				
5	L-40 (new)	30				
6	PSOM-XL	30				
7	L-110-SF	30				
8	SSPF-1	15				
9	SSPF-2	5				
10	SSPF--3	7.5				
11	HSF	15				
12	TC-1	15				
13	TC-2	5				
14	CSF	10				
15	SMPF	60/15				
16	USPF	25				
17	TC-2A	25				
18	TC-2B	10				
19	FHSB	20				
20	SB-1	3				
21	GLR	3				
22	CB-1	3				
23	CGSF	10				
24	CGSS-1	7.5				
25	CGSS-2	3				
26	SAU	7.5				
27	LCC-1	7.5				
28	LCC-2	3				
29	LCC-3	5				
30	LCC-4	5				
31	SP-1A -ULR	20				
32	SP-1A-MAT	15				
33	SP-1A-CR	15				
34	MSS-1	15/3				
35	VIB-1	16				
36	VIB-2	16				
37	W/S - 2	3				
38	SSAB	400 /60				
39	VAB - 1	10				
40	VAB - 2	200 /30				
41	UT-TC	10t				
42	SPF-2A	30				
43	SPF-2B	20				
44	SPF-2C	20				

45	SPF-2D	30				
46	DCP	20				
47	CGSS- 3	12.5				
48	CGSS- 4	7.5				
49	GRLP	3				
50	GRLC	3				
51	SRC-1	5				
52	SRC-2	3				
53	RTR	5				
54	CTF	15				
55	W/S - 1	3				
56	6C-1	175/50				
57	6C-2	5				
58	6B-1	12.5				
59	6B-2	1				
60	2CR-1	50/5				
61	PSPF	60/20				
62	VTF-1	10 / 2				
63	VTF-2	3				
64	PPTF	3				
65	THTF-1	10				
66	THTF-2	5				
67	2A	5				
68	2A-1	15				
69	2A-2	15				
70	HSB-1	10				
71	S200SHF	30				
72	HAT-1	7.5				
73	HAT-2	7.5				
74	HAT-3	3				
75	AATF-1	3				
76	AATF-2	3				
77	AMPF-1	0.5				
78	AMPF-2	0.5				
79	AMPF-3	0.5				
80	AMPF-4	0.5				
81	CALB-1	3				
82	CALB-2	3				
<b>Total cost per One year (82 Cranes)</b>						
<b>Total Cost for 82 cranes for three years ( Cost per one year x 3)</b>						

**2. Cost break-up for maintenance of Cranes for Work Centre – B (SPROB)  
(Refer condition No: 13.10 of the terms & conditions)**

Sl no	Crane Code	Capacity / SWL in tones	RATE FOR ONE SERVICING IN A YEAR (IN RUPEES)			
			PPM (Once in a year) (1)	Annual Servicing (Once in a year) (2)	Load test (Once in a year) (3)	Cost per year (1+2+3)
1	08/114/01	30				
2	08/114/02	1				
3	08/115/01	7.5				
4	08/116/01	60/15				
5	08/117/01	60/15				
6	08/120/01	1				
7	08/122/01	0.5				
8	08/125/01	3				
9	08/128/01	15				
10	08/128/02	15				
11	08/128/03	20				
12	08/130/01	7.5				
13	08/130/02	10				
14	08/130/03	20				
15	08/132/01	20				
16	08/132/02	3.5				
17	08/133/01	10				
18	08/135/01	15				
19	08/135/02	3.5				
20	08/136/01	3				
21	08/138/01	20				
22	08/139/01	50/10				
23	08/140/01	50				
24	08/142/01	30				
25	08/142/02	0.5				
26	08/145/01	40				
27	08/145/02	50				
28	08/151/01	20				
29	08/152/01	50/10				
30	08/160/01	12				
31	08/161/01	20				
32	08/161/02	3				
33	08/162/01	25				
34	08/162/02	2				
35	08/164/01	50/10				
36	08/165/01	0.5				
37	08/166/01	60/15				

38	08/167/01	1				
39	08/168/01	3				
40	08/169/01	20				
41	08/169/01	3.5				
42	08/170/01	30				
43	08/170/2	7.5				
44	08/171/01	50/10				
45	08/172/01	7.0				
46	08/113/01	1				
47	08/118/01	2				
48	08/118/02	2				
49	08/120/02	1.5				
50	08/120/03	1				
51	08/122/02	1				
52	08/122/03	1				
53	08/122/04	2				
54	08/125/02	1				
55	08/125/03	1.5				
56	08/125/04	3				
57	08/126/01	1.5				
58	08/126/02	1				
59	08/127/01	1				
60	08/129/01	2				
61	08/130/03	1				
62	08/142/03	2				
63	08/142/04	2				
<b>Total cost per One year (63 Cranes)</b>						
<b>Total Cost for 63 cranes for three years ( Cost per one year x 3)</b>						

**3. Cost break-up for Major works / MAJOR MODIFICATION / RECTIFICATION works / Stand by duty (Refer condition No: 9.0 & 10.0 of terms & conditions)**

Sl No	Category	Estimated man hours	Rate per hour	Total cost
1	Supervisor	2000		
2	Fitter	4000		
3	Electrician	4000		
4	Welder	500		
5	Unskilled labour	6000		
6	Welding set ( Welding electrodes will be supplied by Department)	300		
7	Gas cutting set including consumables (Oxygen cylinder and acetylene cylinder)	200		
<b>Total Cost</b>				

#### 4. PRICE BID FORMAT

Sl No	Description	Cost per year	Total cost for 3 years
1	Maintenance charges of WORK CENTRE –A (VALF) for 82 Nos of cranes ( Break-up details of 1 of Annexure –C)		
2	Maintenance charges of WORK CENTRE–B (SPROB) for 63 of Nos cranes ( Break-up details of 2 of Annexure –C)		
3	Cost of Manpower for Major works / Modification / Rectification works / stand by duty ( Break-up details of 3 of Annexure –C)		
4	Taxes (if any)		
5	Total maintenance Cost for three years		

*Note : The formats 1,2,3 & 4 given in the annexure - C shall be filled and attached along with price bid as per the point 22.2 of PART-II*

## CONFIRMATION/COMPLIANCE STATEMENT

Sl. No	Description of terms and conditions	Compliance		Reasons for deviation If no, explain the reason (if space is not sufficient separate sheet may be enclosed.
		yes	No	
	<b>SCOPE OF WORK</b>			
1	Conducting PPM, AM, Load test and Brake down maintenance as per the points 1.0 to 1.6 of tender document.			
	The period of contract shall be of <b>Three years</b> as per point 2.0 of tender document.			
2	Accept of the contract for <b>4<sup>th</sup> year with same terms &amp; conditions and rates as per the point 2.0 of tender document.</b>			
3	Place of work as per points 3.0 to 3.3 of tender document.			
4	Qualified and experienced maintenance personal shall be deployed as per points 4.0 to 4.7 of tender document.			
5	Working hours to be followed as per points 5.0 to 5.2 of tender document.			
6	List of cranes offered for maintenance as per point 6.1 of tender document.			
7	Spares of EOT crane and rewinding motors and brakes ect., shall to be carried out as per points 7.1 to 7.3 of tender document.			
8	Minor/Major works shall to be carried out as per point 8.0 of tender document.			
9	Modification / Rectification works shall to be carried out as per point 9.0 of tender document.			
10	During critical operations/launch activities, the contractor shall provide manpower for Stand by duty as per point 10.0 of tender document.			
11	Additional PPM, AM and load testing will be carried out on request of Department as point 11.0 of tender document			
12	Transportation & accommodation arrangements for the staff and material as per the points 12.1 to 12.2 of tender document.			
13	<b>Work experience (minimum five years) in the field maintenance of higher capacity EOT cranes and enclosed list of clients &amp; work orders / Purchase orders</b> as per the point 13.1 of tender document.			
14	The contractor shall register his items at security gate as per point 13.2 of tender document.			
15	The contractor shall fulfill all the obligations required under workmen Compensation act as amended from time to time. The contractor shall ensure minimum wages as per the relevant act as per point 13.3 of tender document.			
16	Insurance for staff against accidents as per the point 13.4 of tender document.			

17	The Department will not accept any liability for the contractor as per the point 13.5 of tender document.			
18	In case any equipment or property of the Dep. Is damaged by the contractor or his employees, the same shall be rectified at free of cost as per point 13.6 of tender document.			
19	The offer includes labour, materials, equipment, transportation ect as per 13.7 of tender document.			
20	Acceptance addition of new cranes and deletion of cranes from the AMC as per point 13.8 of tender document.			
21	On receipt of the PO, the contractor shall submit the time schedule of maintenance of all the cranes as per point 13.11 of tender document.			
22	Acceptance of tender documents points from 13.12 to 13.20.			
23	Acceptance of consumables supply as per point 13.22 of tender document.			
24	Acceptance of entry regulations for the contractor and his staff as per point 14.00 of tender documents.			
25	As SDSC SHAR is a highly restricted and sensitive area, service mechanics planned for deputation shall have high integrity and shall be certified by the Contractor. (as per the point 15.0 of tender document)			
26	Acceptance of security deposit terms as per the point 16.0 of tender document.			
27	Acceptance Payments terms as per the points 17.1 to 17.4 of tender document.			
28	Recovery clause as per the points 18.1 to 18.2 of tender document.			
29	Acceptance of the EMD as per the point 19.0 of tender document.			
30	Acceptance of the contract cancellation condition as per the point 20.0 of tender document.			
31	<b>Confirmation of submission of the experience in the maintenance of higher capacity cranes, Number cranes maintained in a year and list of clients &amp; work orders / Purchase orders furnished along with techno-commercial part bid as per the point 22.2 &amp; 23 of tender document.</b>			
32	Confirmation/compliance statement (Annexure – D has filled and submitted along with techno-commercial part bid as per the point 22.2 of tender document.			
33	<b><i>The price offer has been submitted in the enclosed format ( 1,2,3 &amp;4) in annexure-C as per the points 13.10, 9.0 &amp; 10 and along with price bid as per the point 22.2 of PART-II</i></b>			
34	Acceptance of validity of the offer as per the point 13.20 of the tender document.			