

PUBLISHING THE DETAILS OF TENDER/CONTRACTS FINALIZED BY RAILWAYS ON WEBSITE FOR THE MONTH OF APRIL '2012

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
Tender No.	Item/Nature of work	Mode of tender enquiry	Date of Publication of NIT	Types of bidding (single/two bid system)	Last date of receipt of tender	Nos. of tender Received	Nos. & Names of Parties qualified after technical evaluation	Nos. & Names of Parties not qualified after technical evaluation	Whether contract awarded to lowest tender/ Evaluated L-1	Contract No. & date	Names of contractor	Value of contract in ₹	Scheduled date of Completion of supplies.
ET/TRS/WC/05/11-12	"Polyurethane (PU) painting of Electric Locomotives" at ELS/Itarsi. (Qty. 25 Nos of Locos)	Open	04.01.2012	Single	10.02.12	05 Nos.	05 Nos. 1.M/s A.K. Soni, C-32, Kasturba Nagar, (Near Chetak Bridge) Bhopal.(2/5) 2.M/s Almex Laboratories Pvt. Ltd., T-71, MIDC, Tarapur, Boisar, (Maharashtra) (3/5). 3.M/s Shivashish Motors, 5/1340, Kalyug Street, Bhawanivad, Haripura, Surat-395 003 (Gujarat) (4/5) 4.M/s Emprise Marketing B-1/31, Sector 'H', Aliganj, Lucknow-226024 (UP) (1/5) 5.M/s A.M. Jain & Co. Sarswati Apartment, Near Dr. Bhole Hospital, Jamner Road, Bhusawal-425 201 (5/5)	Nil	Lowest tender	ET/TRS/WC/05/11-12, dtd. 23.4.2012	M/s A.K. Soni, C-32, Kasturba Nagar (Near Chetak Bridge) Bhopal	2283815.25	22.4.2014

Contd.....2

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ET/TRS/WC/10/11-12	"Dismantling, Cleaning, Baking and Becktoling of parts of Traction Motor type TAO-659, Taochi & Hitachi" (Qty. 720 TM)	Open	02.02.2012	Single	06.3.2012	01 No.	01 No. M/s Himanshu Traders, Indira Nagar, New Yard, Itarsi-461 115 (1/1)	Nil	Single Lowest tender	No.ET/TRS/WC/10/11-12, dtd. 23.4.12	M/s Himanshu Traders, Indira Nagar, New Yard, Itarsi-461 115	812822.16	22.4.2013

Sd/-
(Sanjay Manoria)
Divisional Elect. Enggr. (TRS)
/ Sr. DEE(TRS)/ELS/ET

Registered With A.D.



WEST CENTRAL RAILWAY

OFFICE OF THE
Sr. DEE(TRS)/ELS/ITARSI
Tele Fax — 07572-265179
email – srdeetrset@gmail.com

No.ET/TRS/WC/05/11-12

Date: 23—4—2012

M/s A.K. Soni,
C-32, Kasturba Nagar
(Near Chetak Bridge)
Bhopal-462 024 (MP)

Dear Sirs,

Sub: — **Acceptance letter for the work of “Polyurethane (PU) painting of Electric Locomotives” at Electric Loco Shed Itarsi as-per RDSO report No.ELRS/IR/0115(Rev'0')Sept' 2006 .**

Ref: — Your offer against this office Tender no. ET/TRS/WC/05/11-12,
(Tender opened 10.02.2012 at 15.15 Hrs.)

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This is to inform you that, the offer submitted by you against the tender referred above for subject work has been accepted by Railway administration 22.22% below the Railway's estimated cost of the work i.e. ₹ **22,83,815.25 (₹ Twenty Two Lakhs Eighty Three Thousand, Eight Hundred Fifteen and Paise Twenty Five Only) for entire work inclusive of material cost, labour charges, transportation charges and all taxes & levies etc.** However, the details of rates are shown at **Serial No.09**, of this acceptance letter and terms and conditions of this contract are as under

1. **SCOPE OF WORK**:—The detailed scope of Work is shown in enclosed tender in Part-IV of tender specification.
2. **QUANTITY**: —25 Nos of Locomotives.
3. **CONSIGNEE**:— Sr. DEE(TRS)/ELS/Itarsi, will be the consignee for the work. The Sr.Divisional Finance Manager, West Central Railway, Bhopal, shall be bill paying authority.
4. **DELIVERY SCHEDULE**:— The contractor shall be provided space and loco between 07:00 hrs to 19:00 hrs. to carryout work at Rly. premises as per availability. The entire work has to be completed within the period of **Two Years** from the date of issue of Letter of Acceptance, from this office. The painting work on each loco, will have to be completed within the minimum period as mutually decided with Railway and firm's representative from the date of notice issued through a letter/ telephonically. On getting information from Electric Shed, as soon as the team arrives for doing the painting work, they will inspect the

Loco offered by the shed for painting work and will clearly point out the damaged/corroded / badly rusted sections of the Loco super structure to the authorized representative of Sr DEE/TRS/WC.Railway, Itarsi, who will arrange to do the necessary cutting, bending and re-welding of another sheet of suitable dimensions at the affected portion. The representative of the firm will start the work after this work is completed by the Shed. There may be one or more locos scheduled for painting at one time concurrently. In such case the contractor shall provide sufficient labours and materials to finish the work of all these nominated locos.

5. **COMPLETION PERIOD**:—The entire work shall be completed within the period of **two years from the date of issue of this acceptance letter**.
6. **SECURITY DEPOSIT**:— The security deposit /rate of recovery/mode of recovery shall be as under :-
 - a. Total Security Deposit will be ₹ 1,14,200/- (₹ One Lakh, Fourteen Thousand, Two Hundred Only)
 - b. The earnest money ₹ 58,750/- (₹ Fifty Eight Thousand, Seven Hundred, Fifty only) deposited by the contractor will be retained by the railways as part of security deposit for the due and faithful fulfillment of the contract by the contractor.
 - c. The balance amount of security deposit of ₹ 55,450/- (₹ Fifty Five Thousand, Four Hundred Fifty Only) will be recovered from the running bills only of the contract at the rate of 10% of the bill amount till the full security deposit is recovered.
7. **PERFORMANCE GUARANTEE**:—The firm should give a Performance Guarantee in the form of an irrevocable Bank Guarantee or FDR, TDR etc. as mentioned in tender documents amounting to ₹ 1,14,200/- (₹ One Lakh, Fourteen Thousand, Two Hundred only). The P.G. should be furnished by the firm in any form mentioned in tender document in favour of Senior Divisional Finance Manager, West Central Railway, Bhopal before signing of the contract agreement and shall be initially valid up-to the stipulated date of completion plus 60 days beyond that. The Performance Guarantee shall be submitted by the firm within stipulated period in terms of GCC clause 16(4)(a)
8. **LEGAL CHARGES**:— All legal documents like Indemnity Bond, Guarantee Bond, Power of Attorney/partnership deed etc. should be executed on non-judicial stamp paper of ₹ 250/-. Each document will be legally vetted from Law Officer/HQ Office/Jabalpur with the cost of ₹ 200/-.

9. **SCHEDULE OF RATES:**— The schedule of rates and quantities of M/s A.K. Soni, Bhopal, accepted by Railways are as under.

Sr. No.	Description of Work	Qty.	Unit Rate in ₹.	T/Amount In ₹
01.	“Polyurethane(PU) painting of electric locomotives” at electric loco shed ,Itarsi as-per RDSO report No. ELRS/IR/0115 (Rev'0') Sept'2006 or latest as under- (a) Painting by Polyurethane Paint for exterior of the locomotives as-per RDSO specification no. M&C/PCN/100/2009 (b) Painting by Enamel Paint for Interior of the locomotives as-per RDSO specification no. M&C/PCN/120/2005 or latest.	25 Locos	1,17,450/-	29,36,250/-
	GRAND TOTAL			29,36,250/-

Firms offer cost, 22.22% below the Railway's

total estimated cost i.e. ----- (-) ₹ 6,52,434.75

Firm's offer net Cost accepted by Rly administration ----- = ₹ 22,83,815.25

(Total ₹ Twenty Two Lakhs, Eighty Three Thousand, Eight Hundred Fifteen & Paise Twenty Five Only) for entire work

10. **PRICE VARIATION CLAUSE:**—No price variation for this tender/contract will be applicable. The rates quoted should therefore be firm. The price value quoted by the tenderer and accepted by the Railway shall be treated as firm during the entire period of completion of work.

11. **PAYMENT TERMS:**—

- 100% Progressive payment shall be made for completed quantity, subject to furnish the bills in-duplicate and satisfaction inspection report. PAN to be submitted along with Bill, without PAN no payment will be made.
- Income Tax, Education Cess & commercial tax of Madhya Pradesh Govt. shall be deducted from contractor's bill as applicable.
- It may be noted that, the payments as above are subject to compliance of contractual obligation followed by Railway in works contract which are brief signing of agreement, verification of Power of attorney by Railway's legal department furnishing valid ITCC, Security Deposit money, MB entries, Bill in Railway's standard form etc. It is also mandatory to provide the following information by the contractor along with bill.
 - Contractor's Bank a/c no.
 - Name of the Bank.
 - MICR code of the Bank.

12. **FORM OF BILL:**— Bill should be submitted in Bill form No. EB-4 (On Account contract certificate) & Bill form No. EB-3 (Final contract certificate).

13. **ORDERS FOR RELEASE OF PAYMENT THROUGH ECS/EFT:** —
- i. Firm has to give consent in a mandate form for receipt of payment through ECS/EFT/NEFT.
 - ii. Firm has to provide the details of Bank Account in line with Reserve Bank of India guidelines for the same. These details will include Bank Name, Branch Name and Address, Account type, Bank account number and Bank and Branch code as appearing on MICR cheque issued by bank.
 - iii. Firm has to attach certificate from their bank certifying the correctness of all above mentioned information (as mentioned in para (ii) above).
 - iv. In case of non-payment through ECS/EFT or where ECS/EFT facility is not available, payment will be released through cheque.
14. **DEVIATION:**— In your offer, you have **not mentioned** any terms and conditions. Hence, all Railway's terms and conditions are binding to you.
15. **LIABILITY FOR THE COST OF LABORATORY TEST:**— In the event of rejection of raw material by the Inspector in consequence of the sample thereof, which is removed by the Laboratory or other place of test being found on test to be not in conformity with the contract or in the failure of the contractor for any reason to deliver the raw material passed on tests within the stipulated period of the contract or shall on demand pay to Engineer all cost incurred in the inspection and for test. Cost of test shall be assessed at the rate charged by the Laboratory to private persons for similar works.
16. **WARRANTY PERIOD:**— The contractor will have to undertake the warrantee of the work and materials used in painting for a period of 3 years from the date of issue of final inspection certificate from the Railway's. If any defect/failure noticed during the warranty period, contractor will rectify the defect free of cost. If contractor fail to arrange rectification of defect noticed during the warranty period within 15 days after receipt of advice from Sr.DEE/TRS/Electric Loco Shed, West Central Railway, New yard, Itarsi, the Railway shall have full liberty to get rectification done from Railway shed or out side agency and in such cases the rectification charges shall be recovered from the security deposit/ final outstanding bills with Railway or other Zonal Railways.
17. **REFUND OF SECURITY DEPOSIT & PERFORMANCE GUARANTEE:-** The P.G. shall be released after physical condition of the work based on "completion certificate" issued by the competent authority stating that, the contractor has completed the work in all respect satisfactorily. The SD, however, shall be released only after the expiry of the maintenance period and after passing the final bill based on "No claim Certificate".
18. **QUANTITY OPTION:**—The Railway reserves right to increase or decrease the quantity by 25% during the currency of contract. The total cost will be adjusted accordingly.

19. **FACILITIES TO BE PROVIDED BY RAILWAYS:**— Following facilities will be provided to the contractor free of cost.
- (i) One store room in the shed premises for keeping the contractor's material. The use of this room for residential purpose will not be allowed.
 - (ii) One no. compressed air outlet with isolating cock. The contractor has to make own arrangement for taking off the air to the actual work spot.
 - (iii) EOT crane for handling the hoods.
 - (iv) One no. water tape for cleaning work.
 - (v) One point single phase 230 V/3-Phase, 415 Volt, Electric supply point for use of electric appliances for painting work. No electric charges will be levies for works related to the scope of this tender.
20. **CONTRACTORS LIABILITIES:** —
- (a) No Labour and transport, shall be provided by the Railway for execution of work.
 - (b) The responsibility for safe custody of materials, tools, equipments etc. will be of the contractor.
 - (c) The tenderer may visit the concerned section of Electric Loco Shed, West Central Railway, Itarsi by appointment with this office and ascertain the nature, quantum of work and approaches.
 - (d) The contractor will be responsible for any damage to the material/equipment or injury to labour during the period of work and he should take prior precautions to safeguard the material/equipment and ensure safety of his labour.
 - (e) The work completed by the contractor will be inspected by authorized representative of Sr. DEE(TRS)/Electric Loco Shed, West Central Railway, Itarsi and accepted after satisfaction. If any complaint is received regarding the work, the same will have to be rectified by the contractor free of cost.
 - (f) In addition to the conditions laid down the actual conditions such as GCC etc. prevailing at the time of signing the contract document shall supersede any of the provision as mentioned in the tender document.
 - (g) All the legal and financial implications as a result of modification in Government policy and act will be accordingly accommodated and shall be acceptable to the contractor.
 - (h) All the disposals regarding this tender remains under the jurisdiction of Bhopal court.
 - (i) General conditions of contract amended up-to date will be applicable.
 - (j) The contractor will be responsible for any compensation to be paid to his employees as a result of any mishap during the course of work. Railway will not be responsible for any injury, loss of life/damages to contractor's labour or supervisors.
 - (k) The contractor shall remain at all time liable and responsible to the Railways for any loss or damage caused to Railway material. The assessment of damage shall be done by Railways and this assessment shall be final and binding on the contractor.

- (l) The Railways will also be authorized to recover the amount of loss suffered by the Railways from the contractor under these provisions and the decision and determination by the Railways or its authorized representative and shall not be challenged in any court of law or arbitration or otherwise and the contractor after signing this agreement hereby irrevocably authorizes the Railways to set off and adjust such loss or damage against the amount of security deposit and/or outstanding payment and in the event of short fall, the contractor shall immediately on issuing a certificate by the Railways, pay the same amount to the Railways without demur or objection.
- (m) The contractor has to make own arrangement to protect their staff and surroundings from the danger to health & of fire. The contractor will provide his men the protective gears such as protective glasses, shoes, helmet, dress etc. on his own cost.
- (n) The contractor has to make suitable arrangement to cordon off the area of painting to avoid escaping paint particles/fumes to the surrounding area/ atmosphere causing health hazards to the staff working nearby

21. **OTHER TERMS & CONDITIONS:** —

- (i) **COMPLIANCE OF STATUTORY LAWS:-** The contractors shall at all times, adopt such safe methods of working as will ensure safety of structures equipment and labour safety rules if at time, the Railway finds the safety arrangements inadequate or unsafe, the contractor shall take immediate corrective action as directed by the Railway's representative at site. He should also comply all the labour laws & acts as applicable.
- (ii) The contractor shall make his own arrangement for all tools and appliances including spray guns required for spray painting of the Locomotives, all material handling equipment's, ladder / trolley required for painting and all labour required to ensure efficient methodical execution of the work. The rates quoted and accepted shall be deemed to be inclusive of all charges of such items. Railway Administration shall only provide free of cost the EOT Crane, whenever available and required by the firm for movement of roof/ hoods, space for storing materials, tools & equipment and suitable outlet with isolating cock for delivering compressed air for working of pneumatic tools brought by the firm. However, the firm will make arrangement on its own for compressed air required for spray painting.
- (iii) The responsibility for safe custody of the materials, tools, equipment's and machines etc. will be of the contractor.
- (iv) The contractor shall be liable to pay for direct losses, damages caused to the Railway Administration by him or his workmen knowingly or unknowingly while they are in Railway premises working or not working. The amount so recovered will be determined by Sr. DEE/TRS/Electric Loco Shed, West Central Railway, New yard, Itarsi.

22. **FAILURE TO COMPLETE THE WORK WITHIN THE TIME LIMIT:** —
- 22.a.a.1.1. Completion time for one loco shall be minimum period as mutually decided with Railway and firm's representative from the date of handing-over of Loco to the Contractor. The Railway Administration does not guarantee constant volume of work to be handled by the contractor at a time. Nevertheless, the contractor shall always and promptly provide for adequate number of staff/persons and his authorized supervisor to comply with the workload. If loco is detained due to delay in contractor's part, an LD shall be levied on delayed loco.
- 22.a.a.1.2. Contractor should take all care to avoid delay on account of contractor works. If work is delayed on account of contractors, penalty shall be imposed as-per the contract stipulation.
- 22.a.a.1.3. If the contractor fails to carry out, execute and complete the work to be done by him under this contract within the time specified in the tender form, the contractor shall accept a reduction in the total amount payable to him by the Railway as per the GCC
23. **GOVERNANCE OF CONTRACT:**—This contract shall be governed by the latest General conditions of Contract IRS standard conditions of contract and Railway's standard Arbitration clause. In case of any ambiguity between GCC and special conditions of contract, special conditions of contract will prevail.
24. This being an indivisible works contract hence, all General Terms and Conditions of Works Contract of West Central Railway shall be applicable to firm.
25. **SPECIAL INSTRUCTION FOR ISSUE OF IDENTITY CARD BY CONTRACTOR:** —The contractor is bound to issue identity card to each and every person employed by him and deployed for execution of the contract work as-per the prescribed format provided in the tender document, at his cost. Failure on the part of the contractor to issue Identity cards to their employees will be treated as breach of contract conditions and therefore will be dealt as-per GCC.
26. **SIGNING OF CONTRACT AGREEMENT:** —
- 20.1. The contractor shall have to furnish ownership deed, certificates of registration, legal documents, Performance guarantee Power of attorney in favor of the person signing the contract agreement etc. after receipt of the letter of acceptance within stipulated period. The Performance guarantee shall be submitted by the firm within stipulated period in terms of GCC clause 16(4) (a)
- 20.2. The contractor will be intimated regarding vetting of above said legal documents and contractor shall arrange for signing of contract agreement after receiving the intimation in this connection. In case the firm is a partnership firm, the contract agreement as power of attorney shall be signed by all partners.

All other Railway's terms and conditions of tender booklets are binding to firm.

You are advised to please attend this office within **Seven days** from the date of receipt of this acceptance Letter with required legal documents stated above.

Please sign each and every page of this acceptance letter and return one copy to this office in token of acceptance of all conditions mentioned above.

Thanking you,

Yours Sincerely,

DA : Part-IV (Tender
Specification)

Sd/-
(V.K.Singh)
Asstt. Div. Elect. Engineer (TRS)
/ Sr. DEE(TRS)/ELS/ET.
For and on Behalf of President of India,

C/- Sr. DFM/WCR/Bhopal. — For information and necessary action please.

C/- SSE/M-1/TRS/ET — He will supervise the work and progress
must be submitted to undersigned regularly.

C/- SSE(CS)/TRS/ET — For information & necessary action.

/ Sr. DEE/TRS/ELS/ET

PART-IV

WEST CENTRAL RAILWAY

ELECTRIC LOCO SHED, ITARSI
ELECTRICAL DEPARTMENT (TRS)

Tender No. ET/TRS/WC/05/11-12

**TENDER SPECIFICATION FOR THE WORK OF
“POLYURETHANE(PU) PAINTING OF ELECTRIC LOCOMOTIVES”
AT ELECTRIC LOCO SHED, ITARSI AS-PER RDSO REPORT NO.
ELRS/IR/0115(REV'0')SEPT'2006 .**

- 4.0.0. **QUANTITY**: — 25 Nos of Locomotives.
- 4.1.0. **SCOPE OF WORK**:—Painting of electric locomotives with “PU” (Polyurethane) paint as-per scope of work given as-below.
- 4.1.1. **Governing Specifications**: — Specification of PU painting, raw materials of various components and accessories to be used in polyurethane painting shall be as laid down in the RDSO specification nos.
1. ELRS/IR/0115/Rev.0 Sept'2006
 2. M&C/PCN/120/2005 or latest (for fire retardant paints)
 3. M&C/PCN/100/2009 or latest
- In order to maintain quality, it is necessary to use the material of standard and reputed brands only.
- 4.1.2. **GENERAL REQUIREMENT**: — The complete system of one make should be adopted in one locomotive to achieve the compatibility.
- 4.1.3. **APPROVAL OF PAINT** : — Contractor will have to obtain the necessary prior approval of Engineer of Electric Loco Shed, Itarsi, for the series of paint to be used, before commencement of the work.
- 4.1.4. **The requirement of painting**:—Following metallic surfaces are to be painted. Non-metalic parts are excluded from the scope of painting unless specifically mentioned in the following paragraphs. Suitable masking of all such parts e.g. cab instruments, cables, equipments, headlights, glasses etc. is necessary to avoid damage due to unintended ingress of paint/primer/putty to these parts.
- (a) **Exterior Surface**: - This will include external walls of locomotive and buffer plate, cattle guard, sand box and its covers, head light, eagle guard, horn shade, mu conk cover, rain protection cover etc.
 - (b) **Interior Surface**:- This will include internal walls of locomotives, AC-1, AC-2, TK, BD, hand brake, cab SB, panels

- (c) Driver's Cab:- This will include drivers cab from inside and outside.
- (d) Roof:-This will include covering its inside and outside portions of the locomotive roof.
- (e) Bogies, pipes and under frame:-This will include bogie as well as under frame surface and pipes

4.1.5. The locomotive, earlier painted with Alkyd/enamel paint, will be made available for undertaking the painting work at Shed's premises. In case the locomotive, which is earlier painted with PU paint, is given for painting, the procedure for surface preparation for repainting shall be as per Para 4B of RDSO report No. ELRS/IR/0115(Rev`0') Sept 2006 or latest.

4.2.0. EXTERIOR SURFACE PAINTING WITH PU PAINT (For Alkyd/enamel painted locomotives):

4.2.1. **Surface preparation**:—The locomotives may carry thick layer of paint previously applied over the surface. De-painting with the help of flame or suitable chemical can be considered but in doing so it must be ensured that the body sheet metal is not adversely affected in any way. Thereafter previously applied paint shall be removed using certified iron free discs containing ceramic minerals as abrasive in order to prevent impregnation of iron particles in steel structure that promotes chances of electrochemical rusting. Finally complete striping to the extent of exposing the bare metal with no trace of previous paint or primer remaining on the surface, shall be achieved. In the areas that have been rebuilt by welding, the weld beads should be leveled using rotary grinders and with certified iron free depressed center wheels to make the surface smooth and even. In case de-painting is carried out using suitable chemicals a naturalizing agent like a metal conditioner must subsequently be used to remove traces of residue which may be housed in welded areas that can cause corrosion later on.

4.2.2. **APPLICATION OF DEGREASER AND TACK CLOTH PRIOR TO APPLICATION OF EPOXY BASED ZINC PHOSPHATE PRIMER**::-

A degreaser should be applied manually immediately after the depainting exercise. The degreaser must evaporate leaving no residue. A tack cloth, made of non-woven material ensuring lint free surface should be used to remove any remaining dirt/dust on the surface. Blow of compressed air should not be used to remove the remaining dirt and dust as it can deposit oil on the surface.

The material of Epoxy Based Zinc Phosphate Primer shall be in accordance to Chapter-II of RDSO/Specification No.M&C/PCN/100/2009 & Airless spray method of application is to be used for Epoxy Based Zinc Phosphate primer as per Chapter-I, para 3, Sl.No.1 of the same specification.

- 4.2.3. **APPLICATION OF EPOXY BASED ZINC PHOSPHATE PRIMER APPLICATION FOLLOWED BY SANDING:**— The double pack product shall be applied up to a uniform coating thickness of 60 to 80 microns by cup gun method/air less spray. This application shall be carried out as soon as possible after surface preparation is done as above to prevent chances of rusting. These surfaces should be sanded after the epoxy zinc phosphate primer has dried fully to make it smooth. This may be done manually by spongy blocks and sand paper of 180 grit. The sanding can done by dry or wet sanding method. It will have to be ensured that the layer of primer does not get stripped too much at any place. Should the primer get removed in any area, it will be necessary to reapply the same and smoothen the areas again.
- 4.2.4. **APPLICATION OF TWO PACK POLYESTER PUTTY FOLLOWED BY SANDING:**- The sanded surface shall be subjected to application of unsaturated polyester two- pack putty with capability to build up-to 30 mm thickness by knife/Spatula (as mentioned in RDSO/Specification No. M&C/ PCN/100/2009) wherever required. All the major dents, scratches as well as the sides of weld beads should be filled up to level with this putty. after fully drying, sanding shall be done to obtain maximum smoothness with random orbital sander machine with a sanding disc of preferable polyester film backing with both wet/dry capability in 180 grit.
The material of Polyester Putty shall confirm to Chapter-III of RDSO/ Specification No.M&C/PCN/100/2009.
- 4.2.5. **APPLICATION OF TWO PACK FINE POLYESTER PUTTY FOLLOWED BY SANDING:**— The entire surface shall be applied with fine polyester putty with the knife. the objective of applying putty is to achieve a thoroughly even surface free from scratches. two-three coats of putty can be applied depending upon the conditions. one coat of putty should be applied in movements in the vertical direction. the edges of the knife should be leveled manually after putty has dried, before application of second coat of putty, in horizontal hand movements. Thereafter sanding shall be done in the above – mentioned method by grit paper to further reduce unevenness of the surface and achieve finish. at this stage wet sanding may be done manually with the help of spongy blocks and sand paper of 320 grit or with random orbital sander using 320 grit discs.
- 4.2.6. **APPLICATION OF POLYURETHANE BASE SURFACER:** — The full surface is now to be coated with the P.U. based two pack surfacer (premium PU primer) by cup gun method or by airless spray, followed by the wet sanding procedure with water paper of 600 grit, in such a way that the coating layer should not be less than 60 microns(as per para 1.7 of Chapter-IV of RDSO/Specification No.M&C/PCN/100/2009, dry film thickness of 60 microns minimum per coat is prescribed) at any place.
The material of polyurethane base surfacer shall confirm to Chapter-IV of RDSO/Specification No.M&C/PCN/100/2009 & Airless spray method of application is to be used for polyurethane base surfacer as per Chapter-I, para 3, Sl.No.3 of the same specification.

4.2.7. **APPLICATION OF FINAL PREMIUM P.U. BASED PAINT:**—It should be noted that paint has to be dried in normal atmosphere or in stoving oven if available. The drying period as specified by the manufacture of paint for given atmospheric condition should be followed. As also the manufacturer's recommendation should be followed for using activator and thinner. The final painting is to be carried out by base coat / clear coat method by cup gun method or by airless spray according to the pattern and scheme of the locomotive. the clear coating material should be dual pack. The thickness of PU finish paint should be 40 microns and that of clear coat should be minimum 40 microns (as per para 3.2.5 of Chapter-V of RDSO/Specification No.M&C/PCN/100/2009, dry film thickness of 35 microns minimum per coat is prescribed).The material of polyurethane based paint shall confirm to Chapter-V of RDSO/Specification No. M&C/PCN/100/2009 & Airless spray method of application is to be used for polyurethane base surfacer as per Chapter-I, para-3, Sl.No.4 of the same specification.

4.3.0. **INTERIOR SURFACE PAINTING:** —

4.3.1. **Surface preparation:** — For removal of previously applied paint, methods such as heat flame, chemical cleaning or sanding with orbital sanders may be used in different areas as per need. Care should be taken to avoid any undesirable effect on the Bogie sheet or any other part. In the machine room area the method and extent of de-painting shall depend upon the extent of dismantling of equipments. In IOH, however, limited accessibility can be achieved. The objective is to remove the accumulated dirt, oil and remaining coats of previous paints. However unlike in the case of exterior surface, here the base of the paint will remain the same, i.e. enamel. Hence the requirement of de-painting is not as stringent as in case of exterior surface. In case of IOH de-painting may be done in areas exposed depending on practicality. Sanding of the surface is to be done manually with 80 grit paper or by Random Orbital sanders using 80 grit paper and then followed by cleaning with suitable degreasers.

4.3.2. **APPLICATION OF ANTI-CORROSIVE PRIMER:** — After cleaning surface area with the tack cloth, it should be coated with red-oxide zinc chromate primer to IS: 2074. It can be sprayed by cup gun/by airless spray method or applied with the help of brush depending upon the location.

4.3.3. **APPLICATION OF ENAMEL PUTTY AND SANDING** — All the weld beads should be leveled using rotary grinders. All the joints and other visual scratches as well as welded beads should be filled with the two-pack enamel putty as required to level the surface.

Thereafter sufficient drying time should be allowed in accordance with the manufacturer's recommendation. Preferably drying may be done overnight. This dried putty should be sanded on with a paper of 180 grit to level the surface. Thereafter the surface should be cleaned with tack cloth.

4.3.4. **APPLICATION OF FIRE RETARDANT PAINT:**— The surface is to be painted with fire retardant paint as per the instructions in the colour scheme. The paint can be sprayed or applied with brush depending upon the location making sure that the DFT of the paint should not be less than 80 microns at any place. It will be necessary to apply minimum 2 coats to achieve this thickness. The specifications of this paint should match the RDSO Specification No. M&C/ PCN/120-05 or latest.

4.4.0. **DRIVER'S CABS:** —

4.4.1. **SURFACE PREPARATION:**— The procedure for surface preparation, putty works, primer coating as well as sanding which is to be carried out, is same as that of exterior painting i.e. from para 4.2.1 to 4.2.6 as above.

NOTE: It is clarified that the even though driver desk is to be subjected to painting but the equipments of the driver's desk. i.e. gauges, master controller, etc. shall not be subjected to putty work. Suitable masking may be done for protection.

4.4.2. **APPLICATION OF FINAL PREMIUM PU BASED PAINT** — The final paint has to be MATT FINISH two pack premium PU based paint to be applied by cup gun method . The DFT of the paint that is sprayed in cabin should not be less than 50 microns at any place and this thickness can be achieved by applying minimum two coats. Normally the painting work of driver's cabs should be done after completing all other maintenance activities. The entire exposed portion not intended to be painted should be masked properly with the help of paper tape before starting spraying process (paint/primer).

4.5.. **ROOF PAINTING :** —

4.5A **EXTERIOR SURFACE**

4.5 A.1. **SURFACE PREPARATION:**— The procedure is as mentioned above in Para 4.2.1.

4.5 A.2. **APPLICATION OF ANTI-CORROSIVE PRIMER:** — The surface should be cleaned thoroughly with the help of wire brushes and tack cloth. all the welded beads should be leveled with the help of rotary grinders. Subsequently it is to be coated with red-oxide zinc chromate primer to IS: 2074 making sure that the DFT is not less than 40-50 microns at any place.

4.5.A.3. **APPLICATION OF TWO-PACK PUTTY:** — After a drying period of at least 24 hrs, all the major dents and scratches as well as weld beads are to be filled with this two- pack putty by knife to achieve leveling of surface and thereafter wet sanded with 80 grit paper. The purpose is to obtain maximum smoothness, maintain a perfect/ symmetrical level.

- 4.5 A.4. **APPLICATION OF ALUMINUM PAINT:**— The whole surface area is to be cleaned with the help of tack cloth and then to be painted by aluminum paint with the help of spray gun using cup gun method. The DFT of the paint should not be less than 60-80 microns at any place and this thickness is to be achieved in minimum three coats.
- 4.5 B. **INTERIOR SURFACE:** — The procedure for painting the roofs from inside is same as mentioned above from para 4.3.1.to 4.3.4. The roofs should be kept on raised stand for interior painting.
- 4.6.0. **BOGIES, PIPES AND UNDER-FRAME PAINTING:** —
- 4.6.1. **CLEANING:**— After the locomotive is stripped off completely, the under-frame surface and pipe should be cleaned thoroughly with the help of scrapers and wire brushes to remove the bulk of muck and mud that may be stuck to it. Thereafter the method of cleaning can be adopted depending upon the facility available at site. It is preferable to wash the under frame with a jet of water mixed with non-corrosive and non-toxic cleaning agents. Therefore no separate cleaning procedure is necessary.
- 4.6.2. **APPLICATION OF ANTI-CORROSIVE PRIMER:**—After Cleaning the under-frame and bogie are to be coated with an anti-corrosive red oxide zinc chromate primer to IS:2074. The advisable DFT is of 60-80 microns. This should be achieved in minimum two coats. While doing so, necessary care should be taken so that the cables are not painted or damaged.
Pipes may be applied with a suitable rust converter that should be applied evenly on the entire surface prior to application of Anti Corrosive primer. Care should be taken to ensure that rust converter does not affect adhesion of anti-corrosive red oxide zinc chromate primer to IS:2074
- 4.6.3. **APPLICATION OF ENAMEL SYNTHETIC PAINT TO IS:8662:**—The bogie as well as under frame is to be painted according to the colour scheme, with the help of brushes. The DFT of the final paint should not be less than 40 microns at any place and this thickness is to be achieved in two coats minimum.
- 4.7. **LETTERING:**— After drying the tenderer(s) has to do lettering in accordance with the relevant instruction using enamel synthetic paint to IS 8662 or Decal graphics as per relevant CLW specification No. CLW/MS/10/029 Dt. 15.03.99, as per colour scheme of locomotive and as per Railway's requirement .i.e. lettering work on the various locations in the locomotive & on the loco body. However, the colour scheme to be adopted shall be decided by the contractor and consignee before execution of the work and if Railway, so desires, scheme can be changed and proposed colour scheme shall be informed by the consignee to the contractor.

4.8. **PROCEDURE FOR SPOT REPAIR OF POLYURETHANE PAINTED LOCOS:—**

- (a) Identify area where spot repair is to be done.
- (b) Strip paint in approx 120% of the area surrounding a spot repair. In case any sharp edges are available then the stripping is required to be done to that line. Stripping may be done using a random orbital sander of back up 3" dia using a grit 36 grit disc in the marked area.
- (c) Degrease with a suitable degreaser specified in para 4.2.2 so that a no residue remains.
- (d) Apply unsaturated polyester putty (two pack) in the dented area.
- (e) Sand the area after putty cures with a grit 80 disc with a random orbital sander with 3" back up pad.
- (f) Mask area other than 120% marked earlier where overspray may come with a soft edge masking tape and with Overspray protective sheets.
- (g) Spray epoxy zinc phosphate primer (two pack) in the area to be rectified.
- (h) Sand using grit 220 on the Random orbital sander as earlier.
- (i) Mask area other than 140% marked earlier where overspray may come with a soft edge masking tape and with overspray protective sheets.
- (j) Apply Top coat paint after matching shade with the earlier coated paint. The application may be done on a hidden area to match the shade since there may be some loss of gloss in the major area due to UV exposures and passage of time.
- (k) Fade out thinner should be spread on the joints between newly painted area and the old one with the stroking method.
- (l) Remove Masking Tape and Overspray protective sheet.
- (m) Degrease complete side on which touch up done with degreaser.
- (n) The polyurethane clear is to be spread on 200% of the area surrounding a spot repair and then spread by fade out thinner on joints to remove any hint of touch up.

4.09. **CLEANING AND POLISHING PROCEDURE TO BE ADOPTED DURING AOH (As per RDSO report):—**During AOH schedule PU painted locomotives requires a special type of cleaning, the procedure is as follows:-

- a. Cleaning whole surface with a cotton cloth. Remove all the oily substance and dirt on the body.
- b. The surface should then to be washed with a non acidic car shampoo.
- c. Wipe off the whole surface dry with a dry soft cotton cloth leaving no residue in it.

For third year a change in the method of polishing is recommended. After the step C, the entire surface may be polished with the help of polishing machine and soft polishing pads of natural wool buff pad and sponge, the whole surface is to be polished with suitable paint rubbing systems to achieve permanent gloss.

4.10.0. **INSPECTION:** —

4.10.1. **INITIAL INSPECTION:**-Initial inspection of each loco should be carried-out jointly by the Railway's representative and the contractor's representative, before taking-up the repairing works. The existing locomotive identification no. and markings along with the colouring scheme shall be recorded

4.10.2. **STAGE INSPECTION:**—The stage inspection may also be carried-out in respect of raw materials brought-out, paints and any other materials quality assurance plan etc., as-per RDSO specifications mentioned above and deemed fit by the Railway administration/ RDSO specification. The contractor should keep a record of material used, there source with necessary certificates. The Railway's representative should have free access to inspect the painting work at any time and stage to check the quality of work. The defects and deficiencies pointed-out should be recorded and attended.

4.10.3. **FINAL INSPECTION:**— Final inspection of the locomotive after completion of work on individual locomotive will be carried-out by the Railway's representative along with contractor before recording the measurement.

The contractor has to arrange all the facilities required during all the stages of inspection at free of cost and to bear all the incidental charges required, if any, towards the chemical testing etc.. After the conclusion of inspection to the satisfaction of Railway's representative and completion of work, an acceptance certificate, will be issued.

4.11. **SUGGESTED BRANDS FOR PU PAINTS:** —

PRODUCT	DUPONT	AKZO NOBAL	APPG-DEL TRON	ICI
Degreaser	3920S	M600	D837	P850-1402
Metal conditioner	5717S	EMCF-Primer	DERUSTER APPG	2K DERUSTER
Unsaturated two pack Polyester putty for DENTS >6 mm	3M Body filler	AKZO FILLER	3M Body filler	3M Body filler
Polyester putty for DENTS 6mm >	749R/762R	POLYSTOP LP	A656 GALVAPLAST	P551-1050
Epoxy zinc Phosphate Primer	DUPONT EZP Primer	AKZO EZP Primer	DELTRON EZP Primer	ICI EZP Primer
Epoxy Surfacer	1220R	Auto surfacer 940HS	D839	P565-777
PU top Coat	IMRON700	SIKKENS Autobase plus	DELTRON PLUS	2K Series
PU clear coat	3200S	AUTOCLEAR PLUS	D880	2K Easy clear

Note: - The contractor shall procure the material of the approved make/brand from the authorized dealers of the paint manufacturers as detailed above, any other sources added/deleted during work execution, shall be applicable.

The procurement of painting system shall be done as-per RDSO specification no. MNC/PCN/100/2009 of May'2002

Signature of Contractor
With Full Address & Seal

Sd/-
/ Sr. DEE(TRS)/ELS/ET

Registered With A.D.



WEST CENTRAL RAILWAY

OFFICE OF THE
Sr. DEE(TRS)/ELS/ITARSI
Tele Fax — 07572-265179
email – srdeetrset@gmail.com

No.ET/TRS/WC/10/11—12

Date: 23—4—2012

M/s Himanshu Traders,
Indira Nagar, New Yard,
ITARSI—461 115 (MP)

Dear Sirs,

Sub:— **Acceptance letter for the work of “Dismantling, Cleaning, Baking and Beckettoling of parts of Traction Motor type TAO-659, Taochi and Hitachi” .**

Ref: — Your offer against this office Tender no. ET/TRS/WC/10/11-12,
(Tender opened 06.3.2012 at 15.15 Hrs. and negotiated offer
opened on date 19.4.2012 at 12.30 Hrs.)

.....

This is to inform you that, the offer submitted by you against the tender referred above for subject work has been accepted by Railway administration 2% above the Railway's estimated cost of the work i.e. **₹ 8,12,822.16 (₹ Eight Lakhs, Twelve Thousand, Eight Hundred, Twenty Two & Paise Sixteen only)** for entire work, inclusive of all taxes, duties & charges etc. No extra payment shall be made by Railway administration under any circumstances. However, the details of rates are shown at **Serial No.08**, of this acceptance letter and terms and conditions of this contract are as under

1. **SCOPE OF WORK**:—The detailed scope of Work is shown in enclosed tender in Part-IV of tender specification.
2. **QUANTITY**:— 720 Traction Motor.
3. **CONSIGNEE**:— Sr. Divisional Electrical Engineer (TRS) Electric Loco Shed, West Central Railway, Itarsi, will be the consignee for the work. The Sr. Divisional Finance Manager, West Central Railway, Bhopal, shall be bill paying authority.
4. **TIME LIMIT FOR COMPLETION OF WORK**:— The entire work shall be completed with in 12 months from the date of issue of this Acceptance Letter.

5. **SECURITY DEPOSIT**:— The security deposit /rate of recovery/mode of recovery shall be as under :-
- Total Security Deposit will be ₹ 40,650/- (₹ Forty Thousand, Six Hundred Fifty only).
 - The earnest money ₹ 15,940/- (₹ Fifteen Thousand, Nine Hundred Forty only) deposited by the contractor will be retained by the railways as part of security deposit for the due and faithful fulfillment of the contract by the contractor.
 - The balance amount of security deposit of ₹ 24,710/- (₹ Twenty Four Thousand, Seven Hundred, Ten Only) will be recovered from the running bills only of the contract at the rate of 10% of the bill amount till the full security deposit is recovered.
6. **PERFORMANCE GUARANTEE**:—The firm should give a Performance Guarantee in the form of an irrevocable Bank Guarantee or FDR, TDR etc. as mentioned in tender documents amounting to ₹ 40,650/- (₹ Forty Thousand, Six Hundred Fifty only). The P.G. should be furnished by the firm in any form mentioned in tender document in favour of Senior Divisional Finance Manager, West Central Railway, Bhopal before signing of the contract agreement and shall be initially valid up-to the stipulated date of completion plus 60 days beyond that. The Performance Guarantee shall be submitted by the firm within stipulated period in terms of GCC clause 16(4)(a)
7. **LEGAL CHARGES**:—All legal documents like Indemnity Bond, Guarantee Bond, Power of Attorney/partnership deed etc. should be executed on non-judicial stamp paper of Rs.250/-. Each document will be legally vetted from Law Officer/HQ Office/Jabalpur with the cost of Rs. 200/-.
8. **SCHEDULE OF RATES**:— The schedule of rates and quantities of M/s Himanshu Traders, Itarsi, accepted by Railways are as under.

Sr. No	Description of Work	Qty.	Unit Rate in ₹	Total amount in ₹
1.	Dismantling, Cleaning, Baking & Becktoling of parts of Traction Motors Type TAO-659, Taochi and Hitachi			
(a)	Dismantling of TM, Becktoling & baking of stator and Armature, Removing of stator 'M' seal & Re-providing the M. Seal (As per scope of work).	720	483.594	3,48,187.68
(b)	Cleaning of TM stator, Armature & other parts of armature. Dismantling and cleaning of Rocker ring, Brush holder & cleaning of inspection cover (As per scope of work).	720	623.190	4,48,696.80
	Total Estimated Cost			7,96,884.48

Firms offer cost, 2% above the Railway's total estimated cost i.e. ₹ **15,937.68**
 Firm's offer net Cost accepted by Rly administration ----- = ₹ **8,12,822.16**
(₹ Eight Lakhs, Twelve Thousand, Eight Hundred Twenty Two & Paise Sixteen only) for entire work

9. **PRICE VARIATION CLAUSE**:—The rates accepted are firm and price variation shall **NOT BE ACCEPTABLE** in this tender.

10. **PAYMENT TERMS:**—

- (a) 100% Progressive payment shall be made for completed quantity, subject to furnish the bills in-duplicate and satisfactory inspection report. PAN to be submitted along with Bill, without PAN no payment will be made.
- (b) Income Tax, Education Cess and commercial tax of Madhya Pradesh Govt. shall be deducted from contractor's bill as applicable.
- (c) It may be noted that, the payments as above are subject to compliance of contractual obligation followed by Railway in works contract which are submission of Performance Guarantee, Power of attorney, verification of Power of attorney by Railway's legal department, signing of agreement, MB entries, Bill in Railway's standard form.

11. **FORM OF BILL:**—

- (a) Bill should be submitted in Bill form No.EB-4 (On Account contract certificate) & Bill form No. EB-3 (Final contract certificate).
- (b) Income Tax & Commercial Tax of M.P. Government as applicable shall be deducted from contractor's bill.

It is also mandatory to provide the following information by the contractor along with bill.

- 1. Contractor's Bank a/c no.
- 2. Name of the Bank.
- 3. MICR code of the Bank.

12. **ORDERS FOR RELEASE OF PAYMENT THROUGH ECS/EFT:** —

- i. Firm has to give consent in a mandate form for receipt of payment through ECS/EFT/NEFT.
- ii. Firm has to provide the details of Bank Account in line with Reserve Bank of India guidelines for the same. These details will include Bank Name, Branch Name and Address, Account type, Bank account number and Bank and Branch code as appearing on MICR cheque issued by bank.
- iii. Firm has to attach certificate from their bank certifying the correctness of all above mentioned information (as mentioned in para (ii) above.
- iv. In case of non-payment through ECS/EFT or where ECS/EFT facility is not available, payment will be released through cheque.

13. **QUANTITY OPTION:**- The Railway reserve right to increase or decrease the quantity by 25% during the currency of contract. The total cost will be adjusted accordingly.

14. **DEVIATION:**— You have **not mentioned** any terms and conditions in your original offer as-well-as negotiated offer. Hence, all Railway's terms and conditions are binding to you.

15. **REFUND OF SECURITY DEPOSIT & PERFORMANCE GUARANTEE:**- The P.G. shall be released after physical completion of the work based on "completion certificate" issued by the competent authority stating that, the contractor has completed the work in all respect satisfactorily. The SD, however, shall be released only after the expiry of the maintenance period and after passing the final bill based on "No claim Certificate".

16. **CONTRACTORS LIABILITIES:** —
- 16.1. The responsibility for safe custody of materials, tools, etc. will be of the contractor. The responsibility of safe custody of materials, equipments will be entirely on the contractor's part.
- 16.2. The tenderer may visit the concerned section of Electric Loco Shed, West Central Railway, Itarsi by appointment with this office and ascertain the nature, quantum of work and approaches.
- 16.3. The contractor will be responsible for any damage to the material/equipment or injury to labour during the period of work and he should take prior precautions to safeguard the material/equipment and ensure safety of his labour.
- 16.4. The work completed by the contractor will be inspected by authorized representative of Sr.DEE(TRS)/Electric Loco Shed, West Central Railway, Itarsi and accepted after satisfaction. If any complaint is received regarding the work, the same will have to be rectified by the contractor free of cost.
- 16.5. In addition to the conditions laid down the actual conditions such as GCC etc. prevailing at the time of signing the contract document shall supersede any of the provision as mentioned in the tender document.
- 16.6. All the legal and financial implications as a result of modification in Government policy and act will be accordingly accommodated and shall be acceptable to the contractor.
- 16.7. All the disposals regarding this tender remains under the jurisdiction of Bhopal court.
- 16.8. General conditions of contract amended up-to date will be applicable.
- 16.9. The contractor will be responsible for any compensation to be paid to his employees as a result of any mishap during the course of work. Railway will not be responsible for any injury, loss of life/damages to contractor's labour or supervisors.
- 16.10. The contractor shall remain at all time liable and responsible to the Railways for any loss or damage caused to Railway material. The assessment of damage shall be done by Railways and this assessment shall be final and binding on the contractor.
- 16.11. The Railways will also be authorized to recover the amount of loss suffered by the Railways from the contractor under these provisions and the decision and determination by the Railways or its authorized representative and shall not be challenged in any court of law or arbitration or otherwise and the contractor after signing this agreement hereby irrevocably authorizes the Railways to set off and adjust such loss or damage against the amount of security deposit and/or outstanding payment and in the event of short fall, the contractor shall immediately on issuing a certificate by the Railways, pay the same amount to the Railways without demur or objection.
17. **GOVERNANCE OF CONTRACT:**— This contract shall be governed by the latest General conditions of contract, IRS standard conditions of contract and Railway's standard Arbitration clause. In case of any ambiguity between GCC and special conditions of contract, special conditions of contract will prevail.
18. This being a works contract hence, all General Terms and Conditions of Works Contract of West Central Railway shall be applicable to firm.

19. **SPECIAL CONDITIONS FOR ISSUE OF IDENTITY CARD BY CONTRACTORS** :— The contractor is bound to issue Identity card to each and every person employed by him at Electric Loco Shed, Itarsi and deployed for execution of the contract work as-per the prescribed format provided in the tender document, at his cost. Failure on the part of the contractor to issue Identity cards to their employers at Itarsi will be treated as breach of contract conditions and therefore will be dealt as-per clause 62(VII) of general condition of contract (GCC).
20. **SIGNING OF CONTRACT AGREEMENT:** —
- 20.1. The contractor shall have to furnish ownership deed, certificates of registration, legal documents, Performance guarantee Power of attorney in favor of the person signing the contract agreement etc. after receipt of the letter of acceptance within stipulated period. The Performance guarantee shall be submitted by the firm within stipulated period in terms of GCC clause 16(4) (a)
- 20.2. The contractor will be intimated regarding vetting of above said legal documents and contractor shall arrange for signing of contract agreement after receiving the intimation in this connection. In case the firm is a partnership firm, the contract agreement as power of attorney shall be signed by all partners.

All other Railway's terms and conditions of tender booklets are binding to firm.

You are advised to please attend this office within **Seven days** from the date of receipt of this acceptance Letter with required legal documents as stated above.

Please sign each and every page of this acceptance letter and return one copy to this office in token of acceptance of all conditions mentioned above.

Thanking you,

Yours Sincerely,

DA : Part-IV (Tender
Specification)

Sd/-
(Neeraj Sharma)
Asstt. Div. Elect. Engineer (TRS)
/ Sr. DEE(TRS)/ELS/ET.
For and on Behalf of President of India,

C/- Sr. DFM/WCR/Bhopal. — For information and necessary action please.

C/- SSE/E-3 TM/TRS/ET — He will supervise the work and progress
must be submitted to undersigned regularly.

C/- SSE(CS)/TRS/ET — For information & necessary action.

/ Sr. DEE/TRS/ELS/ET

PART IV

WEST CENTRAL RAILWAY

ELECTRIC LOCO SHED, ITARSI
ELECTRICAL DEPARTMENT

Tender No. ET/TRS/WC/10/11—12

**TENDER TECHNICAL SPECIFICATION FOR
“DISMANTLING, CLEANING, BAKING AND BECKTOLING OF PARTS OF
TRACTION MOTOR TYPE TAO-659, TAOCHI AND HITACHI”
(QTY. 720 TRACTION MOTOR)**

- 4.0. **QUANTITY**: — 720 Traction Motors.
- 4.1. **SCOPE OF WORK**:— Works contract for dismantling, Cleaning, Baking and becktoling of traction motors type TAO 659, Taochi and Hitachi 15250A TM available at Electric Loco Shed, W.C.Rly. Itarsi.
- 4.1.1 **Complete dismantling, Cleaning, Baking and becktoling of Traction Motor includes the following works.**
- a. Dismantling of TM, and separating of armature, stator, rocker ring, brush holder, end shields & machined parts. Backing and beacktoling of stator and armature, removing of stator’s M seal & re-providing of M seal(after tightness of MP & IP bolts by the shed staff).
- (1) Dismantling of TM, and separating of armature, stator, Rocker ring, Brush holder and end shields, machined parts.**
- (i) Remove all carbon brushes and handover to section.
 - (ii) Remove all six brush holder and handover to section.
 - (iii) Remove the pinion with grease pressure and unlock the Commutator End locking of armature.
 - (iv) Now vertically place the TM of equal packing and unscrew the Pinion End side end shield holding bolts and lifting hook screwed on Pinion End side end. Now armature safety lifted with D-sackle ceiling and safely on armature wooden stand horizontally.
 - (v) Now place the stator towards Commutator End side and unscrew the Commutator End shield holding bolts and removes the end shield from the stator and placed on Commutator End side bearing racer of armature.
 - (vi) Now remove the rocker ring with lifting hook by hand and placed on rocker ring zone and also print the stator number on rocker ring.
 - (vii) Now remove the Pinion End side bearing cover, Moving deflector and grease plate deflector (HS15250A TM) and kept in release part box.
 - (viii) Now mark the armature No. on both end shields and shifts the end shield to end shield stands.

(2) Backing and bectoling of armature & stator, removing of stator M seal & re-providing the M seal (after tightness of Main Pole, Inter Pole bolts by shed staff)

(i) Backing and bectoling of armature : —

- (a) Now lift the armature from roller stand and kept on oven trolley and baked the armature in oven at 150⁰ c for 4 hours.
- (b) After backing blow the compressed air through the armature with hose pipe so that all the dry dust blow out from the armature. and After blowing red varnish (Becktol) should be sprayed on armature except commutator and Teflon V-band and armature shaft.

(ii) Backing and bectoling of stator : —

- (a) After cleaning, backing of stator is carried out in oven for 4 hours at 150⁰c. After backing blowing of stator with compressed air so that all the dust came out and then red becktol is sprayed on coils and then again backing for 2 hours in oven.
- (b) Cleaning of Junction Box insulators, Rocker ring, Pinion End & Commutator End side end shields housing area.
- (c) Painting the yoke with grey paint.

(iii) Removing of M seal of Main Pole, Inter Pole bolt and re-providing of M seal : —

- (a) Removal of M seal and re-providing of M seal (after tightness of MP & IP bolts by the shed staff) will be done by the firm. The tightness of MP & IP bolts at proper torque value will be carried-out by the shed staff.
- (b) Cleaning of TM stator, armature, Rocker Ring Brush Holder, other parts of armature/machined parts and cleaning of bottom inspection covers. This includes the following work.

(i) CLEANING OF ARMATURE: —

- (a) Tight the adopter on both ends of armature and place the armature in cleaning stand gently and steadily such that, both side adopter rests on cleaning stand rollers.
- (b) Ensure sufficient dry compressed air pressed of 8 kg and blow the armature using hose pipe from both the end.
- (c) Spray Kerosene oil through spray gun over evaluate coil gaps, Pinion End spider hole area and clean thoroughly.
- (d) Clean Commutator End side of armature area only with dongry cloth wet with kerosene oil.
- (e) Ensure no spillage of kerosene oil over Commutator End side banding, commutator, riser and Teflon V ring and clean thoroughly the shaft bearing racers and stoppers.
- (f) Finally blow the armature with compressed air.
- (g) Examine thoroughly for rubbing marks, balancing piece cracks spider cracks, overheating, loose wedge, and any defects noticed during the cause of attention should be brought to the knowledge of Railway supervisors inhale immediately.

- (ii) **CLEANING OF STATOR:** —
Thorough cleaning of yoke (stator) with kerosene oil after scrapping and blowing finally blowing the yoke with compressed dry air and kerosene oil jet in kerosene oil stator cleaning plant after the blow the compressed air through the stator so that all the kerosene oil blow out and finally clean the stator surface & coil with cotton waste.
- (iii) **CLEANING OF MACHINED PARTS:** — Cleaned all the machined parts of armature with kerosene oil and finally cleaned with cotton waste.
- (iv) **Cleaning of rocker ring, Brush holder & bottom inspection covers:-**
(a) Cleaning of rocker ring insulators and connecting leads with kerosene oil and finally with compressed air & cotton waste.
(b) Cleaning of B/holder body and spring finger with kerosene oil and finally with compressed air & cotton waste.
(c) Cleaning and scrapping of bottom inspection cover with kerosene oil and removed the rubber gasket cleaned the gasket housing with scrapped and finally painted with grey paint.
- 4.2. CYCLIC TIME FOR SCHEDULE OF WORK :** —
1. Traction motor should be dismantled on first shift
2. Cleaning, backing, bectoling should be carried out on next shifts.
- 4.3. MAINTENANCE OF RECORDS :**— Dismantling and cleaning, backing, bectoling of TM records prepared by supervisor incharge to be made & filled up by contractor supervisor every day. Test and check readings should be taken in presence of Railway supervisor/ representative.
- 4.4 MATERIAL TO BE SUPPLIED BY RAILWAY AND CONTRACTOR :**—
(a) The material required like kerosene oil, paint, dongry, cotton waste, paints, M seal, compressed air and other assistance like megger, dial indicator, spm, EOT crane, DC battery charger for run test electric oven etc. shall be supplied/provided by Railway.
(b) The tools and other items required for carrying out the work like paint brush wire brush, and spray gun has to be arranged by contractor.
(c) Electricity will be arranged by railways on free of cost.
(d) All the work should be carried out inside the shed premises at traction motor section of Electric Loco Shed West Central Railway. Itarsi as per schedule of work in such a manner that, will not cause any hindrance to the normal working of railways.
- 4.5 INSPECTION:**— The work carried-out by the firm shall be inspected by the Sr. DEE/Itarsi or his authorized representative at site before and after completion of work.

Signature of contractor
With full address & seal

Sd/-
/ Sr. DEE(TRS)/ELS/ET