

भारत सरकार



GOVERNMENT OF INDIA

रेल मंत्रालय

MINISTRY OF RAILWAYS

डीजल रेल इंजन आधुनिकीकरण कारखाना

फैक्स/Fax No.91-175-2306413

फोन/Phone: 0175-2396000, 2396001

पटियाला -147 003(भारत)

DIESEL LOCO MODERNISATION WORKS

PATIALA - 147 003 (INDIA)

No.21/16/5000 11/315654

Dated 26/09/16

M/s Medha Servo Drives Pvt. Ltd.

P-4/5B, I.D.A. Nacharam,

Hyderabad-500076

Sub:- Contract for Annual Maintenance Contract for Maintenance of Medha make Microprocessor based Control System (Medha Model MEP 660) fitted on ALCO locomotives on Indian Railways against this office Tender no. 21/16/5000 opened on 16/08/16.

- Ref:-
1. Your BID ID no. 005398429 DATED 11/8/16
 2. Your letter no. MEP:AMC:DMW:5822:16 DT. 26.08.16 .
 3. Your letter no. MEP:AMC:DMW:6091:16 DT. 08.09.16 .

This office is entering into a Contract for Annual Maintenance Contract for Maintenance of Medha make Microprocessor based Control System (Medha Model MEP 660) fitted on ALCO locomotives on Indian Railways as per terms and conditions given below:

Description	Annual Maintenance Contract for maintenance of Medha make Microprocessor based Control System (Medha model MEP 660) fitted on ALCO locomotives on Indian Railways.
Qty.	5125 loco years
Rates	Rs.1,20,000/- per loco per annum

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रेल मंत्रालय

डी.एम.डब्ल्यू, पटियाला

डी.एम.डब्ल्यू
D.M.W.

मुख्य सामग्री प्रबन्धक
Chief Materials Manager
डीजल रेल इंजन आधुनिकीकरण कारखाना
Diesel Loco Modernization Works
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Discount	1% on basic price if AMC entered by shed is more than 100 locomotive per Annum.		
Service tax	Extra @ 15% on 70 percentage of tender value or as applicable against documentary evidence.		
Limit & validity of Price Agreement	The validity of price agreement is 2 years from the date of RC. However validity of Price Agreement can be further extended with the mutual consent of DMW & M/s Medha.		
Railways-wise limit for placement of supply order against this Price Agreement	Railway-wise limit for placement of AMC against this contract is as under.		
	Railways	Locos due for AMC during	
		1st year of AMC	2 nd year of AMC
		Total	
	CR	174	174
	ER	239	239
	ECOR	0	0
	ECR	199	214
	NER	144	152
	NR	281	338
	NFR	58	64
	NCR	103	103
	NWR	49	60
	SR	180	181
	SCR	298	298
	SER	206	206
	SECR	71	71

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	SWR	52	52	104
	WR	190	190	380
	WCR	248	291	539
	Total	2492	2633	5125
	<p>If Railways wish to place contract for more than limit of loco years indicated above, they will approach DMW for modification in the contract.</p>			
Note	<p>1. Railways are advised that necessary sanction from the competent authority, for the number of locos to be taken up under AMC, fund provision and vetting of proposal as well as demand be taken by the Zonal Railways as per provision of their SOP. On receipt of sanction of competent authority, Sr DME(D) i.e. Diesel Shed incharge or CMPE will place the order as per rate finalized by DMW.</p> <p>2. Sr.DME, the incharge of Diesel Shed or CMPE(Diesel) on Zonal Railway shall operate this contract as per their requirement under their own financial powers and payment shall be made by their respective FA & CAO or Associated Accounts officer of the consignee.</p> <p>3. The contract to be placed on M/s Medha as per Special Condition of Contracts (Annexure 'A') attached.</p> <p>4. However in no case total nos of loco years against this contract for which Zonal Railway can enter into AMC during the entire currency shall increase 5125 loco years.</p>			
Operation of Price Agreement	Contract against the Price Agreement shall be entered into by Sr.DME, the incharge of Diesel Shed or CMPE(Diesel) on Zonal Railway.			
Special	The term 'Zonal Railways' mentioned in above conditions also include 'P.Us' of Indian Railways. If any of the Zonal			

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डीजल रेलइंजन, आधुनिकीकरण कारखाना
Diesel Loco Works

conditions	Railways is not included in the initial Price Agreement, it can be included at any point of time during currency of the contract with certain limit in such a manner overall limit of loco years is not exceeded.
Direct Demanding Officer	All Diesel Sheds of Zonal Railways as per their respective power of purchase.
Total Value of Purchase	Rs.67.96 Crores.
Other terms & conditions	All other terms & conditions which are not mentioned above shall be applicable as per 'Special conditions of contract', works contract and tender. General conditions of contract (GCC) will also apply as per annexure A,B1,B2 AND B3 ATTACHED.

(R.K.VYAS) 17/1/16
CHIEF MATERIALS MANAGER

मुख्य सामग्री प्रबन्धक
Chief Materials Manager
डीजल रेलइंजन आधुनिकीकरण कारखाना
Loco Modernization Works
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Special conditions of contract

- 1.0 **Special conditions of contract for Annual Maintenance for *Microprocessor based propulsion & excitation control system* (with automatic flasher light control, multi-setting vigilance control and event recorder) to RDSO spec no. MP.0.24.0026, fitted on ALCO Diesel Electric locomotives.**
- 2.0 **DEFINITIONS**
- a) 'IR' means Government of India, Ministry of Railways, Railway Board, New Delhi or its nominees.
- (b) 'DMW' means Diesel Loco Modernisation Works, Patiala-147003.
- c) 'Tenderer' means the firm/company submitting the offer for annual maintenance of Microprocessor Control system fitted on ALCO locomotives.
- d) 'Contractor' means the firm or company on whom the order for annual maintenance of Microprocessor Control system fitted on ALCO locomotives has been placed.
- e) 'Sub-contractor' means any person, firm or company from whom the contractor may obtain any services for maintenance of Microprocessor Control system.
- f) User Railway - means the Zonal Railway which can enter into contract with the accepted tenderer in terms of this agreement.
- g) Designated Shed - shall be the shed so designated by the user railway where the locomotives shall be brought for maintenance including the maintenance of Microprocessor Control system.
- h) 'Nominated Officer' means the person nominated by Zonal Railway for the purpose of execution of contract to be entered into as the basis of price agreement to be finalised against this tender.
- i) 'Loco Hours' is the total number of hours in service/breakdown for any locomotive.
- j) 'Down Time of Loco' -Down time shall be the time from which the loco has been handed over to the contractor at the designated shed for maintenance till the time contractor has cleared the loco for service.
- k) 'Loco Years': One loco year is equivalent to one locomotive under AMC for one year.
- 3.0 **SCOPE**
- 3.1 Annual Maintenance for *Microprocessor based propulsion & excitation control system* (with automatic flasher light control, multi-setting vigilance control and event recorder) to RDSO spec no. MP.0.24.0026, fitted on ALCO Diesel Electric locomotives.
- 3.2 The contract will be comprehensive in nature wherein preventive as well as Breakdown Maintenance of Systems will be carried out including the arrangement of spares, tools, consumables, technical expertise and manpower. The replaced consumable/tools/items will be contractor's property. They shall remove the same from the shed's premises with due authority.

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Chief Materials Manager

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Diesel Loco Modernization Works
पटियाला / PATIALA

3.3 The maintenance and support by the contractor shall consist of but not restricted to, four "three monthly preventive schedules" per year for trouble free services of the locomotive as prescribed by the OEM, attention of the locomotives when they touch the shed at approximately 20 days interval. The scope of maintenance shall be largely in line with details at **Annexure- B1** and shall include all extra and out of course attentions including breakdown, if any required, to ensure trouble free operation of the locomotive.

- a) AMC will cover hardware component failures due to reasons like shelf life, wrong wiring, equipment malfunctioning, product type defects, consequential failure etc.
- b) Hardware up-gradation will be on chargeable basis for which separate contract shall be entered into by IR. However the hardware (i.e. card etc) failing frequently should be replaced/upgraded free of cost. The decision of nominated officer of IR with regard to replacement/upgradation of hardware on chargeable/free of cost basis shall be final and binding on firm.
- c) Software up-gradation and related adequate training for the Shed staff will be done free of cost.
- d) Cables and Electrical items in the C.P. other than Microprocessor system are not included in the Comprehensive maintenance contract. However special cables (like shielded cables) of microprocessor & Transducers are included in contract. The major components list of various make Microprocessor Control System working on I. Rlys is placed at **Annexure B3**.
- e) Preventive maintenance schedule has to be prepared by successful tenderer and shall be got approved by Nominated Officer of Zonal Railways.
- f) Procedure for handing over and taking over of Locomotives before and after maintenance, specially with regard to documentation procedure to be followed, should also be got approved by successful tenderer from the nominated officer of IR.

3.4.1 The contractor shall ensure that downtime on account of all maintenance

(Preventive and breakdown) of Microprocessors does not exceed an amount equivalent to 5% of total loco hours for the locomotives covered in the contract. Downtime account shall be carried out every month and the contractor has to ensure not less than 95% availability on Microprocessor account, calculated Zonal Railways wise.

In addition, at no time, more than 5% locomotives will be under breakdown repair on Microprocessor account i.e. the number of locos under breakdown at 0.0 hrs daily shall not exceed 5% of the locomotive under contract, on each zonal Railway.

3.5 The locomotives not covered under manufacturers' warranty for Microprocessor Control system shall only be included under the annual maintenance contract.

4.0 PLACE OF WORK

The maintenance/breakdown will be normally carried out at designated sheds only. However, in case of emergency failure at any location, not included in the contract, and if it is not possible to bring the loco to the designated shed, the contractor's service engineer shall reach within reasonable time from the Railways request logged on contractors toll free service number / written communication like Fax, etc.

Since every such failure will involve some transit time etc. before the locomotive can be handed over to contractor for repairs, and since actual transit time is not in the control of the contractor, it is agreed that for purposes of downtime calculation, the actual time taken from failure of loco to the time loco is handed over for maintenance at the designated shed or a maximum of 36 hrs whichever is less will be in addition to the time for actual maintenance/Serviceing.

5.0 AUTHORITY FOR OPERATION OF CONTRACT

The Price agreement, for trouble free operation of Microprocessor control system of ALCO locomotive shall be operated by the Zonal Railway. Based upon this agreement, contract shall be entered into by Zonal Railways.

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मुख्य सामग्री प्रबन्धक 1579/H
Chief Materials Manager
डीजल रेलइंजन आधुनिकीकरण कारखाना
Diesel Loco Modernization Works
पटियाला

The User Railway shall nominate an officer designated as nominated officer for the purpose of such contract this tender, who shall be the nodal officer for liason with the contractor and the respective Zonal Railways.

6.0 RESPONSIBILITIES OF PARTIES

Following are the responsibilities of Railways and the Contractor.

6.1 RAILWAYS

Apart from the responsibilities of the Railways which may follow out of some other conditions of contract but not mentioned herein, following shall be the responsibility of user Railways

- 6.1.1 The Railway authority shall permit the contractor to work on the Microprocessor control system of the locomotives under preventive maintenance or break down.
- 6.1.2 User Railways shall nominate Officer/ Supervisor for supervision of the above activities.
- 6.1.3 User Railway shall issue an authority to the working staff/service engineer for their entry on the platform and other railway premises. Such authority shall not be a travel authority. And cannot be read as an authority to claim any benefit from Railways, accept as warranted for execution of this contract only.
- 6.1.4 The necessary space, electricity, and water connection shall be provided free of cost as required for at the nearest possible point of the site. In addition, a lockable room to store the tools and tackles shall be provided free of cost by the IR to the contractor. However, there will be no separate exclusive security systems for the space/facility provided to the contractor.
- 6.1.5 The user Railway shall make the locomotives available for the maintenance.
- 6.1.6 Railway shall mention the details of the locomotives including the locomotive nos. covered under Annual Maintenance Contract for the reference of both the parties. In case the base maintenance designated shed of the locomotive is shifted to any other location, the contractor should be given advance notice of 2 months to mobilize the manpower and material.
- 6.1.7 The nominated railway officer shall intimate the firm by Telephone/ Telex/ Fax or in-person mentioning the loco numbers and location of the locos along with the time of call. He shall maintain the register of such calls made for reference of both the parties.
- 6.1.8 In case of failure of the Microprocessor control system is attended by the contractor at a station other than the base maintenance shed, the service engineer shall give a declaration indicating the attendance and clearance time to the concerned Railway Official at the location, which shall be counter signed by the Railway Official. The same shall be submitted to the designated shed along with the site report for records.

6.2 CONTRACTOR


Apart from the duties which may follow out of any other conditions of contract and not mentioned herein, the following shall be the responsibility of the contractor.

All the work including checks shall be carried out on the stable conditions at the designated shed.

- 6.2.1 The contractor shall post a service engineer exclusively for the execution of this contract at the designated shed/sheds if the fleet size is more than 15 locos in that shed. The contractors should also install a toll free number to facilitate the Railways for logging their call request on this toll free number.
- 6.2.2 Service Engineer will carryout preventive maintenance on locos at all days and times including Sundays and Gazetted holidays depending upon availability of locomotive in the shed.

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- 6.2.3 Normally the service engineer shall be available in the shed during normal working hours of the week days to attend break down calls / preventive maintenance.
- A back up engineer will be located at one of the contractor's office and will be available at the designated shed if required to attend the complaints in case of absence of service engineer at the designated shed.
- 6.2.4 The service engineer shall report within 12 (twelve) hrs. at the designated shed if the breakdown call (Logged on toll free number/faxes /telephonic discussion) given during the working days of the week after normal working hours.
- 6.2.5 The service engineer shall report within 24 (twenty four) hrs on gazetted holidays (Govt. of India) and Sundays from the time of call of breakdown.
- 6.2.6 The contractor shall keep all the necessary tools, testing equipment / Spare Parts, Sub-Assemblies & Consumables in the ready stock at the location of the designated shed of maintenance or their workshop or in the nearest office. IR shall, however, provide a lockable room to the contractor at the designated shed.
- 6.2.7 The contractor will furnish the standard list of spares, consumable & tools to be stocked by the contractor at the designated shed, to the incharge of the shed concerned and the Nominated officer of the Railway.
- 6.2.8 It is the responsibility of contractor to keep the adequate spares, consumable and tools for the maintenance of Microprocessor Control System to avoid any delay in repair time. Railway official can check the stock of spares if so desired.
- 6.2.9 The service engineer nominated for the repair on the shed duty shall observe all safety and security rules prevailing at the place of work and as required by law.
- 6.2.10 Any spares used by the contractor from the stocks available with the IR shall be replaced by new within 4 weeks of their usage at no extra cost.
- 6.2.11 The contractor shall maintain all such records/ log-books prescribed by the Railway & produce the same for inspection by IR whenever required.

7.0 PROGRESS REPORT

User Railway should send regular observations and Quarterly progress report to the office of CME/DMW for future centralized reference & performance rating.

8.0 Damages: Following Damages, Not By Way Of Penalty, Shall Be Applicable:

The cumulative maximum damage shall be limited to 20% of the billing amount.

9.1 Damages for Delay in Attending the Breakdown Calls

Problems reported would be advised to the contractor's representative at the nominated place on contact phone no. (which contractor shall apprise at the time of award of contract). The contractor will be required to attend such problems/failures within stipulated time starting from time of intimation failing which damage as described hereunder shall apply.

Any delay by the firm in completing the above activities will affect the running of the train services and may cause loss of revenue to the user Railway. Therefore, the user Railway will recover from the contractor as agreed damages and not by way of penalty a sum of Rs.5,000/-in each case of delay stipulated in Clause 6.2.4 & 6.2.5

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9.2 **Damages for Downtime** (ref. clause 3.4.1):

For this purpose, downtime will be calculated as percentage of total loco hours under contract for the month. This shall be calculated at the Zonal Railway level. In case the contractor fails to maintain the contracted availability requirements, following damages shall be levied as under

Down Time	Damages
5% or less	Nil
5% - 7%	2% of the total monthly proportionate bill
7% - 10%	5% of the total monthly proportionate bill
More than 10%	20% of the total monthly proportionate bill

9.3 **Damages for Locomotive Under Repair** (ref. clause 3.41):

For this purpose the maximum of the figure of locomotives under repair everyday at 0.0. hrs on Medha Microprocessor Control system account over a period of a month will be worked out for concerned Railway. This maximum figure shall not exceed 5% of the total no. of locomotives under maintenance contract during the particular month or else damage shall be levied as under:

Max number of Locos Down	Damages
5% or less	Nil
5% - 10%	2% of the total monthly proportionate bill
More than 10%	10% of the total monthly proportionate bill

However this shall be applicable only when the loco population under the maintenance increases to 20 nos. & above.

10.0 **PAYMENT**

10.1 The total yearly payment shall be made in four Quarterly installments. Each installment shall be paid at the end of each quarter, subject to other conditions of contract.

10.2 A bill will be submitted by the contractor quarterly and it will be certified by the nominated officer for completion of maintenance and after calculation of damages as stipulated in para 10.0.

10.3 The bills submitted by the firm for payment must accompany:

10.3.1 The certificate of maintenance of the locomotives issued by nominated Officer.

10.3.2 The above bill shall bear the individual locomotive number of the locomotives maintained by the firm for each quarter covered under this AMC.

11.0 **THE RECORDS TO BE MAINTAINED BY NOMINATED OFFICER.**

Apart from the other records approved maintenance plans etc. as required by the conditions of the contract, the nominated officer shall maintain following records:

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- 11.1 The user Railway & the contractor will jointly sign the list of locos to be covered under this contract. Any modification will also be jointly signed, as proposed by the user Railway.
- 11.2 The user railways shall maintain records of maintenance contract stating the locomotive numbers to be maintained under this AMC along with the date of inclusion of the locomotive under AMC.
- 11.3 The nominated officer shall keep the register/ record for the previous bills paid for each locomotive to avoid duplicity of payments at any time.

12.0 **PAYING AUTHORITY**

The payment against this contract shall be made by the Controlling Accounts Officer of the user Railways and the same shall be indicated in the contracts entered into by zonal railways.

Any taxes including Income Tax required to be deducted at the source shall be deducted and a certificate to that effect shall be issued to the contractor/uploading the Tax deposits as prescribed under the rules.

13.0 **LAWS GOVERNING THE CONTRACT.**

The contract shall be governed by the Laws of India for the time being in force irrespective of the place of performance or payment under the contract.

14.0 **JURISDICTION OF THE COURTS**

The courts of the place where the contract has been entered into by the user railway and the firm shall alone have the jurisdiction to decide on any dispute arising out of or in respect of the contract.

15.0 **SUBLETTING AND ASSIGNMENT**

The contractor shall not, save with the previous consent in writing of the user Railway, sublet, transfer or assign the contract or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever.

In the event of the contractor's subletting or assigning this contract or any part thereof without any such permission, this will be deemed as the breach of contract and the user railways shall be entitled to cancel the contract.

16.0 **ANNEXURES ENCLOSED**

B1: Maintenance Schedule prescribed by OEM. Refer Clause 3.3 above also.

B2: Population of Locomotive fitted with various make of microprocessor control system fitted locomotive.

B3: Major Components for microprocessor controlled system.

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Annexure – B1

Diesel Electric ALCO Locomotive with Microprocessor based control System (Recommended Preventive Maintenance)

Preventive maintenance for Microprocessor Control System (To be finalized in line with clause 3.0 of the special condition of contract & to be approved by Z. Rlys) Cables and Electrical items in the C.P. other than Microprocessor system are not included in the Comprehensive maintenance contract. However the functioning of CP items or any other component related to μ P control system performance & functioning to be tested during routine checks to ensure reliable service in field. However special cables (like shielded cables) of microprocessor & Transducers are included in contract. The major components lists of various make of Microprocessor Control System is placed at Annexure B3.

- Software up-gradation and related adequate training for the Shed staff will be done free of cost.
- Hardware up-gradation will be on chargeable basis. However the hardwares (i.e. card etc) failing frequently should be replaced/upgraded free of cost.
- Preventive maintenance schedule has to be prepared by OEM in consultation with IR & should get it approved.

II. The activities to be carried out during Preventive maintenance shall be:

- Visual Checks for physical condition of the Equipment.
- Cleaning of Electronic assemblies and other Electrical / Electronic parts by blower.
- Tightness checking of all MS Round Connectors, Inputs and Outputs Terminals Connections.
- Checking of clamping of all cables and Cable assemblies.
- Checking of all Digital Inputs and outputs working in the Manual Test Mode. Checking of Self Load Test if facility is available.
- Functional Checking with different simulated input conditions as may be possible in the installed condition on the loco.
- Event recorder Data Downloading and analysis for ensuring its continued Functional Health.
- Fault Data Downloading and Analysis for identifying the faulty circuits / components. It is possible to identify components which may fail in future by proper analysis of the fault data pack. This will help bring down online failures of Locos.
- Study of Driver Log book or Power control reporting.
- Addressing any shortcoming/ deficiency in the system reported by Shed or noted by firm's representative during preventive maintenance.
- Replacement of the items with Limited life like rubber gaskets etc as per the scheduled maintenance.
- Contractor to inspect the complete microprocessor control system & various transducer /sensors as special wiring to ensure the fail safe operation on line till next scheduled maintenance. Any component failure on line due to improper maintenance/preventive action slackness will be the contractors responsibility.
- Load Box testing /self Load box test as applicable.

III. The various maintenance (prevailing on date) schedules of the Locomotives are

- Trip schedule
- Monthly
- M4
- M8
- M12
- M24
- M48
- Out of course

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Diesel Loco Modernization Works
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Annexure - B2

Zonal Rlys Requirement of M/s Medha / HYD make Micro Processor Based Control System

Sr. No.	Railways	Locos due for AMC during		
		1st year of AMC	2nd year of AMC	Total
1	CR	174	174	348
2	ER	239	239	478
3	ECOR	0	0	0
4	ECR	199	214	413
5	NER	144	152	296
6	NR	281	338	619
7	NFR	58	64	122
8	NCR	103	103	206
9	NWR	49	60	109
10	SR	180	181	361
11	SCR	298	298	596
12	SER	206	206	412
13	SECR	71	71	142
14	SWR	52	52	104
15	WR	190	190	380
16	WCR	248	291	539
	Total	2492	2633	5125

The above mentioned no. of Loco with homing shed had been based on as on date available information at DMW.
The no. of Loco with homing sheds may vary/change due to Loco transfers/DLW/DMW production etc.

निर्धारित
वरि. सहायक वित्त सलाहकार
रेल मंत्रालय
डी.एम.ए.ए. पटियाला

मुख्य सामग्री प्रबन्धक
Chief Materials Manager
डीजल रेल इंजन आधुनिकीकरण कारखाना
Diesel Loco Modernization Works
पटियाला / PATIALA

MAJOR COMPONENTS FOR MICROPROCESSOR CONTROL SYSTEM (The items may be increased/decreased as per requirement of control system up gradation)

(I) M/s Medha make μ P Control system MEP 660

1. Microprocessor Control Panel (MEP 660)
2. Temperature sensors
3. ESS
4. Display unit
5. Traction motor speed sensors.
6. MR pressure sensor
7. Booster air pressure sensor
8. Brake cylinder pressure sensor
9. Event logger
10. Current shunt for traction motor
11. Brake pipe pressure sensor.
12. Alerter bye-pass switch
13. DMR, AGPR, EGPR, XD23, AGD, SR, CMR, SANDR, AFLR, MVR
14. All current & voltage sensors.
15. Train line Resistor Panel
16. FCP, LCR
17. Analog Distribution box.
18. Frequency Distribution box.
19. PGR & CGR (Power Ground Resistance & Control Ground Resistance)

विधोक्षित

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रेल मंत्रालय
डी.एम.डब्ल्यू, पटियाला

मुख्य सामग्री प्रबन्धक

Chief Materials Manager

डीजल रेलइंजन आधुनिकीकरण कारखाना

Diesel Loco Modernization Works

पटियाला / PATIALA

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3.	CMPE(Diesel)/E.C Railway Hd.Qtr, Office Hajipur, Bihar-844101
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17.	FA&CAO/DMW/PATIALA
18.	DY.CME/PLG/DMW/PATIALA

(R.K.VYAS)
CHIEF MATERIALS MANAGER

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