



DELHI METRO RAIL CORPORATION LTD.

(A Joint Venture of Govt. of India & Govt. of NCT, Delhi)

**" Manpower contract for Operation & maintenance of Electrical & Mechanical system
installed at Khyber Pass Depot and CWBR S&T Lab building of DMRC "**

TENDER DOCUMENT

No. O&M/E&M/UG/2015/Manpower/KPD&CWBR

- * NOTICE INVITING TENDER
- * INSTRUCTION TO TENDERER
- * SPECIAL CONDITIONS OF CONTRACT
- * OTHER TERMS AND CONDITIONS
- * BILL OF QUANTITY

SECTION 1
NOTICE INVITING TENDER

1.1 GENERAL

Delhi Metro Rail Corporation (DMRC) Ltd. Invites sealed e-open tenders in TWO PACKETS SYSTEM (Evaluation and Financial) from the eligible tenderes as per tender clause 1.2 of NIT for "Manpower contract for Operation & maintenance of Electrical & Mechanical system installed at Khyber Pass Depot and CWBR S&T Lab building of DMRC"

1.1.1 The details of the Tender are as per following:

Estimated cost of work	Rs. 20,41,059/- inclusive of all taxes
Tender Security amount	Rs. 40821/-
Cost of Tender documents	INR 5250./- (inclusive of 5% DVAT) Non-Refundable
Completion period of the Work	ONE YEAR (from The day of issue of letter of acceptance)
Tender documents on sale	From 11.12.15 to 01.01.16 (upto 18:00 hrs) on e-tendering website www.tenderwizard.com/DMRC Tender document can only be obtained after registration of tenderer on the website www.tenderwizard.com/DMRC . For further information on this regard bidders are advised to contact 011-49424307, 011-49424365 or 011-23417910
Pre-bid Meeting	N/A
Last date of Seeking Clarification	Upto 31.12.15 at 13:00 hrs
Last date of issuing addendum	Upto 05.01.16 at 1500hrs
Date & time of Submission of Tender	Upto 06.01.16 at 1500hrs
Date & time of opening of Technical Bid	Upto 06.01.16 at 1530hrs
Date & time of opening of Financial Bid	Shall be informed after evaluation of technical bid through website www.tenderwizard.com/DMRC
Authority and place for purchase of	DGM/E&M/UG

tender documents, seeking clarifications and submission of completed tender documents	Delhi Metro Rail Corporation, 2nd floor, B-Wing, Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi –110 001
<p>The tender cost and tender security will be in the form of demand draft/ banker’s cheque / bank guarantee in favor of “Delhi Metro Rail Corporation Ltd” payable at New Delhi.)</p> <p>The same should be submitted in original up to 1500hrs on last date of submission of tender in the office of DGM/E&M/UG at above mentioned address.</p> <p>NOTE: Failure of submission of tender cost & tender security (in original) with in stipulated time as mentioned above, leads to rejection of offer submitted by the bidder.</p>	

1.2 Eligibility Criteria

1.2.1 Work Experience:

- a. Experience of having satisfactorily completed similar works carried out at Govt./Semi Govt organization/PSU during last five years ending last day of month previous to the one in which the Tenders are invited should be either of the following:-

Three similar works costing not less than the amount equal to 40% of the estimated cost put up to the tender.

or

Two similar works costing not less than the amount equal to 50% of the estimated cost put up to the tender

or

One similar work costing not less than the amount equal to 80% of the estimated cost put up to the tender

Similar Nature of work:- Supply/providing skilled, Semiskilled/ unskilled manpower for Operation / Maintenance Electrical and Mechanical of Building Services

Note: Electrical Mechanical system, means with or without any combination of works such as DG sets with Sync Panels, UPS & Battery system, Pumps, LT panel , Fire Alarm and Fire Fighting work etc.

Following documents shall be considered for evaluating the criteria of work experience:

- a) Self attested copies of work order, BOQ along with completion certificate (indicating the name of work, final amount, completion date etc) issued by the client preferably on their letter head for completed work from the officer not less than rank of Executive Engineer

- b. Financial Standings:

Applicant should have average Annual Turnover of last three audited financial years not less than 80% of Estimated.

Financial data for latest last three audited financial years has to be submitted by the tenderer along with audited balance sheets.

- c. Self attested copy of VAT/Service tax registration certificate, PAN no.
- d. Applicant must not have been black listed or deregistered by any Govt or Public sector undertaking during last 5 years the contractor has to submit an undertaking on Rs. 10 stamp paper duly attested by Notary in format enclosed in annexure -D
- e. Tenderer shall submit last three years (2012-2013, 2013-2014, 2014-2015) audited financial statement duly attested by certified CA to work out net worth. The net worth must be positive.

1.2.2 The tender submission of bidders, who do not qualify the minimum eligibility criteria stipulated in the clauses 1.2.1 above, shall not be considered for further evaluation and considered rejected. The mere fact that the bidder is qualified as mentioned in sub clause shall not imply that his bid shall automatically be accepted. The same shall be subject to the data as required for consideration of tender prescribed in the ITT. The same should contain all Financial & other details as required for the consideration of tender.

1.2.3 Tender document consists of the following:

Volume –I

- a. Notice Inviting Tender
- b. Scope of Work
- c. Tender prices and schedule of payment

Volume-II

- a. Instructions to Tenderers
- b. Technical Specifications
- c. Special Conditions of Contract
- d. Other terms and condition of Contract
- e. General Conditions of Contract
- f. Content of Bill of Quantities.

Volume –III

- a. Bill of Quantity

1.3 The tenderers may obtain further information in respect of these tender documents from the office of Deputy General Manager /E&M/UG office, 2nd Metro Bhawan Fire Brigade lane, Barakhamba Road New Delhi-110001

1.4 The contract shall be governed by the documents listed above along with latest edition of CPWD Specification, IRS Specifications & MORTH Specifications. These may be purchased separately from the market.

1.5 The intending bidders must be registered on e-tendering portal www.tenderwizard.com/DMRC. Those who are not registered on the e-tendering portal shall be required to get registered beforehand. If needed they can be imparted training on 'online tendering process'. After registration the tenderer will get user id and password. On login tenderer can participate in tendering process and can witness various activities of the process.

- 1.6 The authorized signatory of intending bidder, as per Power of Attorney (POA), must have valid class-III digital signature. The tender document can only be downloaded or uploaded using Class-III digital signature of the authorized signatory.
- 1.7 Tender submissions will be made online after uploading the mandatory scanned documents towards cost of tender documents such as Demand Draft or Pay Order or Banker's Cheque from a Scheduled commercial bank based in India and towards Tender Security such as Bank Guarantee or Demand Draft or Pay Order or Banker's Cheque from a Scheduled commercial bank based in India and other documents as stated in the tender document.
- 1.8 Tenderer is cautioned that the tender containing any material deviation from the tender document which consists of NIT, Instructions to tenderes, General conditions of contract, Special conditions of contract, Bill of quantities is liable to be summarily rejected as non-responsive.
- 1.9 Late tenders (received after date and time of submission of bid) shall not be accepted under any circumstances.
- 1.10 Tenders shall be valid for a period of as per ITT clause 11 from the date of submission of Tenders and shall be accompanied with a tender security of the requisite amount as per ITT clause 12.
- 1.11 DMRC reserves the right to accept or reject any or all proposals without assigning any reasons. No bidder shall have any cause of action or claim against the DMRC for rejection of his proposal.
- 1.12 Bidders shall note that the maximum file size that can be uploaded is 5 MB. All the uploaded files in tender submission should be named properly and arrange systematically.
 - i) The bidders are advised to keep in touch with e-tendering portal www.tenderwizard.com/DMRC for updates. Any corrigendum, addendum etc issued shall be part of this tender document and shall be made available on DMRC website www.tenderwizard.com/dmrc

(Arun Sharma)
DGM/E&M/UG
Delhi Metro Rail Corporation Ltd
2nd floor, Metro Bhawan,
Fire Brigade lane,
Barakhambha Road
New Delhi-110001

SECTION 2

The contractor will execute the work i.e. "Manpower contract for Operation & maintenance of Electrical & Mechanical system installed at Khyber Pass Depot and CWBR S&T Lab building of DMRC"

1.1 The work shall be carried out as per the BOQ at underground station and CWBR S&T Lab building of Delhi Metro Rail Corporation.

2.2 Complete Daily Operation & Checks of Electrical and Mechanical System at Khyber pass Depot of DMRC , i/c preventive maintenance and attending breakdown maintenance as detailed below :-

2.2 (a) Daily Preventive Checklist

Asset/Equipment	Activity
DG	Morning shift
	LUBRICATION- Check engine oil level.
	check & record parameter of DG set
	Check battery voltage
	Evening Shift
	Visual check parameter of DG set
	Check battery voltage
	AIR SYSTEM - Check pre cleance dust pan weekly.
	COOLING SYSTEM- Check coolant level.
	Night shift
	FUEL SYSTEM- Drain sediments from fuel tanks.
	Drain air tank.
	Check and correct leaks.
	Drain fuel filter/Water separator daily.
wall/Exhaust Fan	Morning shift
	Visual check for unusual noise & vibrations
	Visual check for any damage
	Evening Shift
	Visual check for unusual noise & vibrations
	Night shift
	Check for any damage for cable, & loose connection
Panel/Control panel/DB/Socket	Morning shift
	Visual check of cable for any sign of overheating, chattering, burning smell etc.
	Evening Shift
	Check relay status, reset if it is trip .
	record voltage, current, pf etc reading from panel
	Night shift

	cleaning of panels
	Check for any loose connection, tight the same if any,
Split AC/ Ductable AC	Morning shift
	Take room temp. reading
	Check fault status at remote
	Check for any abnormal sound
	Check for air leakage and duct damaged (Ductable A/C)
	Ensure recycling operation of A/Cs.
	Check of temperature sensor unit for cut off and ON
	Evening Shift
	Take room temp. reading
	Check for cleanliness and any abnormal sound
	Check of temperature sensor unit for cut off and ON
	Check A/C grills, clean it if dirty
	Night shift
	Take room temp. reading
	Check the filter condition for cleaning
	Check fault status at remote
Check for any damage or foul / burning smell	
Fire Engine of fire pump room	Morning shift
	Check oil leakage in pipes
	Cooling system
	Check soft water supply
	Check for any leakage
	Evening Shift
	Check the air passage for leakage
	Exhaust, Check the exhaust for leakage
	Night shift
	Fuel system, Drain water and sediments accumulated at the bottom of the fuel tank
	Check the fuel level tank and fill up the tank at the end of each working day
Air intake, Remove the dust from the evacuator valve	
Check exhaust for restriction	
Fire Pumps	Morning shift
	Check for all suction and discharge valves are open.
	Operation of fire pump
	Check for electrical supply connections.
	Evening Shift
	Check for any leakage /abnormality in pipeline
	Night shift
	Check & rectify water leakage from seal/glands

	tightness of all connections
Fire detection system	Morning shift
	Check the current device status of top
	Devices- check for dirty devices and clean it.
	EVENING SHIFT- Visual examination of the battery condition and its electrical connections feeding the system, rectify the same if found faulty
	NIGHT SHIFT- Rectification of troubles.
fire hydrants & Fire Extinguishers	Morning shift
	Check system pressure of hydrant line
	Evening Shift -
	Check for all isolating valves are open
	Night Shift -
	Check for physical condition of hose reel/ hose pipes, nozzle, connectors etc
Light	Morning shift-
	check the on/Off status of all lights, if any found in non-working condition, get it illuminate by replacing/repair the light
General	Morning shift
	Co-ordination with all facilitation & technical rooms for proper working of system
	Frequent rounds to site to check the operation & healthiness of equipments
	Supervision & overview of site day to day operation & overcome to general complaint
	Maintain log books, check sheets, various registers etc properly.
	Check the ON/OFF condition of pole lights/ depot lights as per lighting requirement of DMRC
	Check for any humming & chattering noise
	Check for any foul and burning smell
	Check for any tripping & if found reset the same after checking the proper cause.
	Check the relay status
	Check & record the load on panels
	Evening Shift
	Take all necessary energy meter readings of panel
	Take & record temp. of technical rooms
	Co-ordination with all facilitation & technical rooms for proper working of system
	Frequent rounds to site to check the operation & healthiness of equipments
	Supervision & overview of site day to day operation & overcome

to general complaint
Maintain log books, check sheets, various registers etc properly.
Check the ON/OFF condition of pole lights/ depot lights as per lighting requirement of DMRC
Check for any humming & chattering noise
Check for any foul and burning smell
Check for any tripping & if found reset the same after checking the proper cause.
Check the relay status
Check & record the load on panels
Night shift
Exterior cleaning & dusting of equipments
lighting of all exterior depot lighting
Co-ordination with all facilitation & technical rooms for proper working of system
Frequent rounds to site to check the operation & healthiness of equipments
Supervision & overview of site day to day operation & overcome to general complaint
Maintain log books, check sheets, various registers etc properly.
Check the ON/OFF condition of pole lights/ depot lights as per lighting requirement of DMRC
Check for any humming & chattering noise
Check for any foul and burning smell
Check for any tripping & if found reset the same after checking the proper cause.
Check the relay status
Check & record the load on panels.

2.2 (b) Equipment/System wise Preventive Checklist

Asset/Equipment	Frequency	Activity
DG	Weekly	LUBRICATION- Check engine oil level.
		FUEL SYSTEM- Drain sediments from fuel tanks.
		AIR SYSTEM - Check pre-cleance dust pan weekly.
		Check air clearance restriction cleaner, change air cleaner element if required.
		COOLING SYSTEM- Check coolant level.
		OTHER MAINTAINANCE- Drain air tank.

		Check and correct leaks.
		Drain fuel filter/Water separator daily.
		Check battery status and maintain properly.
		No load testing
Exhaust Fan	Monthly	Check for abnormal sound and vibration
		Measure current and voltage.
		Clean & tightened the connections.
		Visual check for any corrosion and damage.
Panel/Control panel/DB/Socket	Half yearly	cleaning of panels
		Check for any loose connection, tight the same if any,
		Visual check of cable for any sign of overheating
		Clean the contacts of contactors.
		Functioning of switches, relays breakers.
Split AC	Weekly	Check filter for cleaning
		Check fault status at remote
		Check for any abnormal sound
		Check of temperature sensor unit for cut off and ON
		Cleaning of filters
		Check and clean the drains
		Check for Any Overheating mark.
	Monthly	Wash the cooling coil if required.
		Outdoor unit maintenance.
		Measure current and voltage.
		Check and Tight the nut bolts of indoor and outdoor units.
		Check for proper working of MCB and RCCB
		Tight the electrical connections
Measure the grill temp.		
Fire Engine of fire pump room	Weekly	Lube system Check engine oil level by opening Dipstick it should be done initially & 15 min. after shut down, top up req.
		Check oil leakage in pipes

	<p>Cooling system Check soft water supply</p>
	Check for any leakage
	Check hose pipe connections for looseness
	Check the circulation of water for any restriction
	<p>Fuel system Drain water and sediments accumulated at the bottom of the fuel tank</p>
	Check the fuel level tank and fill up the tank at the end of each working day
	<p>Air intake Remove the dust from the evacuator valve</p>
	Check the ait passage for leakage
	<p>Exhaust Check the exhaust for leakage</p>
	Check exhaust for restriction
	<p>Electric Check battery connection for looseness</p>
	Check the electrolyte level of each cell, it should be 1/2" above plates. Fill if required
	Apply petroleum jelly on battery terminals if required.
Quarterly	Repeat the weekly check
	<p>Air intake clean the bowl of air cleaner. Change the element if required</p>
	<p>Electric check the tension of V belt and adjust if required</p>
	Check the connection of starter, dynamo and control panel.
Half yearly	Repeat the quarterly check
	Lub system Replace the lube oil
	replace the lube oil filter element
	<p>Fuel system Clean the filter sleeve with clean diesel</p>
	Replace the pre filter insert of fuel filter
	Other maintenance, check the tappet valve clearance and adjust if required.
Yearly	Repeat half yearly check

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

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

2.2 (c) Breakdown Maintenance:-

Equipment	Key Activity.
Panel/ Control Panels	1, Minor rectifications I.e. correcting loose connections if any 2. Replacement of faulty MCB/MCCB in the DB 3. Replacement of contactors, fuses, relays etc.
FIRE ALARM & DETECTION SYSTEM	1. Checking of faulty detectors and rectify if possible.
Lighting	1. Minor rectifications I.e. correcting loose connections if any 2. Replacement of faulty choke/ tube/ fixture etc.
Circuit breaker	1, Minor rectifications I.e. correcting loose connections if any 2. Replacement of faulty ACBs & other breakers in the DB
Split ACs	1. Minor rectifications I.e. correcting loose connections if any 2. Replacement of fuse/ capacitor, control card etc.

DG	1, Minor rectifications I.e. correcting loose connections if any
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CWBR S&T Lab building

- 2.3 Complete Daily Operation & Checks of Electrical and Mechanical System at CWBR S&T Lab Building of DMRC , i/c preventive maintenance and attending breakdown maintenance and shall perform the following responsibilities at building
- i. Energy monitoring of electrical equipments in the prescribed format and frequency.
 - ii. Temperature monitoring in critical rooms and other rooms at prescribed frequency and as and when required.
 - iii. Prepare the energy monitoring reports
 - iv. Attend the minor faults as per direction of engineer in-charge. i.e. correcting loose connections if any, Replacement of fuse/ capacitor etc
 - v. Replacement of faulty lights as per complaints received or as and when required.
 - vi. Material handling from DMRC E&M Store to station.
 - vii. Assist the Engineer in-charge for maintenance activities & other miscellaneous activities as per Engineer in-charge.
 - viii. Maintain the following equipment as per given schedule and perform the checks

Maintenance of panel DBs in presence of DMRC engineer in-charge

Panel/Control panel/DB/Socket	Half yearly	cleaning of panels
		Check for any loose connection, tight the same if any,
		Visual check of cable for any sign of overheating
		Clean the contacts of contactors.
		Functioning of switches, relays breakers.
fire hydrants & Fire Extinguishers	Monthly	Check for physical condition of nozzle, connectors etc
		Check expiry date of all portable fire extinguishers.
		Check system pressure of hydrant line and record
Light	Half Yearly	Check the tightness of connections

2.4 Other activities to be carried out

- i) Contractor shall carry out all in-house preventive checks for equipments in scope not covered above and are important for system healthiness.
- ii) Replacement of any other faulty component, which can be replaced/repaired in-house. (the decision of in-house replacement shall be of DMRC and bound to contractor).
- iii) Contractor shall prepare the equipment wise monthly failure report and submit the same to DMRC at 7th date of every month.
- iv) Any released faulty equipment/component shall be property of DMRC.
- v) Any spare material and consumable required for maintenance shall be provided by DMRC.
- vi) Any failure shall immediately be reported to DMRC engineer through e-mail.
- vii) The contractor supervisor shall submit the requisition for material required on monthly basis to DMRC engineer in-charge and store the sufficient inventory and consumables to upkeep the system.

3.0. Time schedule to attend the failure

- | | | |
|-----|--|--------|
| 3.1 | Response Time (Non Critical Complains) | 12 hrs |
| 3.2 | Response Time (Critical Complains) | 04 hrs |

4 Manpower deployment

- 4.1 The contractor shall deploy the manpower in consultation with Engineer in-charge and carry out the activities in hygienic manner.
- 4.2 The manpower can also be deployed during OFF days/holidays/night hours as per site requirements for which nothing shall be paid extra.
- 4.3 All the work associated with finishing complete in all respect shall be carried out by contractor for which nothing shall be paid extra.

4.0 DMRC is an ISO-14001 & OHSAS 18001 certified Organization for Environment, Health & safety. The work is to be carried out as per International Norms/Standards and in such

a manner that all premises always look Neat & Clean. Similarly, the waste disposal is also carried out in totally sealed manner without affecting the Environment.

SECTION 3

TENDER PRICES AND SCHEDULE OF PAYMENT

3.1.1 Tender Prices

- a. Unless explicitly stated otherwise in the Tender Documents, the contractor shall be responsible for the whole works, based on the Bill of Quantities and payment shall be as per accepted rates based on the activities carried out as in the Schedule of work.
- b. The rate quoted by the tenderer shall be inclusive of all duties, taxes, fees, octroi and other levies, materials, labour to & for transportation of material and labour charges etc.

3.1.2 Schedule of Payment

Payment shall be made by running bills as per accepted rates on the quarterly basis after submission of bill along with the service report duly signed by station staff & verified by DMRC representative

Payment shall be subjected to deduction of all T.D.S as per applicable law.