

MASTER CONTROL FACILITY – BHOPAL
(QUOTATION THROUGH E-PROCUREMENT MODE ONLY)
(MANUAL TENDERS WILL NOT BE ENTERTAINED)

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1 SCOPE OF WORK

Operation and Maintenance Services of Electrical and Air-Conditioning installation of ISRO – MCF, Main Facility, CISF Housing & Barrack, Scientist Hostel & MCF staff quarters. As per Annexure – A on an annual basis.

MCF shall reserve the right to add or delete the scope of this contract at any given time.

2 DURATION OF CONTRACT

The contract shall be valid for a period of two years with effect from 01.08.2013 to 31.07.2015. Even though the contract duration is for 2 years, the First Three months shall be on a trial basis. If the work is not satisfactory, the contract may either be terminated or another three months time will be given to the contractor for improvement. However MCF reserve the right to terminate the contract at any time by giving one month notice and also MCF reserve the right to enter into a parallel contract with other agencies for whole work or part of the work.

3 REQUIREMENTS

The Contractor is responsible to provide Services as listed below by Qualified and experienced personnel, who can independently handle, Operate and maintain all the Electrical and Air Conditioning installations and systems. The Qualification and Experience certificates are to be furnished to the Department for scrutiny of all personnel being appointed by contractor. Category of workforce to be deployed for different duties is as below.

Sr. No.	Category	Total Service Staff
01	Supervisor (Highly skilled)	1
02	Sub – Station Operator (skilled)	3
03	Air-Conditioning System Operator /Mechanic (skilled)	4
04	Electrician (skilled)	6
05	Helper (semi skilled)	6

4 CONDITIONS OF CONTRACT

The whole works included in the contract shall be executed by the contractor who shall not directly or indirectly transfer, assign or sub-let the contract or part thereof. No undertaking shall relieve the contractor from the full responsibility of the contract.

4. A. GENERAL CONDITIONS:

1. OFFER SHALL BE SUBMITTED IN TWO PART BID SYSTEM

- a. Techno-Commercial bid
- b. Price bid

2. QUALIFYING DOCUMENTS TO BE SUBMITTED ALONG WITH THE TECHNO-COMMERCIAL BID:

- a. Company's profile, Manpower & Experience details and No of qualified technical personnel's employed.
- b. Electrical Class-I license.
- c. Supervisory license for the proposed supervisor.
- d. Work experience certificate of the contractor and must have carried out similar AMC work worth not less than 20 lakhs per annum.
- e. Registration certificate of the establishment.
- f. PF and ESI certificate as applicable.
- g. Compliance available online should be submitted compulsorily. Wherever deviation is there, it should be specifically indicated in Offered Specification column**

3. OFFER OF PRICE:

- a. Price offer shall be submitted as per enclosed format i.e., split-up wages
- b. Rates quoted shall be exclusive of ESI, PF and taxes if any.
- c. Rates quoted shall not be less than Minimum wages recommended by Ministry of Labour & Employment, Government of India for class B city (Bhopal, Madhya Pradesh).
- d. In case, government revises the minimum wages and if the quoted service staff wages falls below the minimum wages, then the department will consider the revised minimum wages applicable for class B city category as basic wages. The party shall consider new minimum wages for the service staff.

4. B. MANPOWER:

1. The Contractor shall furnish local office address, telephone number, Mobile number including of all the work force.
2. The Contractor is responsible to provide Services from qualified and experienced personnel, who can independently handle, Operate and maintain electrical installation as per the guidelines of MCF Bhopal. The work force to be deployed will be screened by the EIC-MCF duly approved by Deputy Director, to ensure the deployment of suitable candidates by the contractor. Necessary Bio-data of all AMC workforce shall be furnished within 15 days on receipt of the contract.
3. Two copies of stamp size photograph of your service personnel, who will be attending services at MCF, shall be sent to the EIC for arranging necessary entry pass to our premises.
4. The antecedents of service personnel stationed at MCF, shall be got verified by police at contractor's cost and the report shall be submitted to Engineer-in-charge, MCF, Bhopal for clearance. The service personnel cleared by EIC shall only be deployed for service.

5. Contractor shall not remove any workforce without prior approval from MCF. The contractor shall on the request of MCF, forthwith remove from the works any person employed thereon by him who and in the opinion of MCF, indulges in any misconduct himself or misbehaves or is of doubtful character. Such persons shall not again be employed on the works without the prior written permission of MCF, or their authorized representatives.

4. C. TECHNICAL QUALIFICATIONS:

1. The Contractor shall arrange to execute operation and maintenance services only through qualified electricians who are permitted to work on electrical installations by appropriate competent authority and as per IE rules 1956.
2. Deployment of full time supervisor for the contract duration at MCF is mandatory. So as to provide full time supervision at site during any maintenance and shall strictly comply to relevant I.E., rules. Absence of the supervisor at any case is not acceptable in the contract, and will lead to termination of the contract.
3. The Contractor shall prepare monthly Duty / Shift roster well in advance in consultation with ISRO – MCF in-Charge and submit the same to this office.
4. The contractor shall be responsible that his service staff follow strictly the duty timings as directed by Engineer- In-Charge.
5. The Contractor shall be responsible to maintain attendance of duty staff, Maintenance of Logbook / Records etc. All leave related issue for the deputed staff shall be the responsibility of the contractor and shall intimate the corresponding staff shift exchanged / replacements in advance in writing to the ISRO-MCF in-charge.
6. For leave replacement service staff / work force should also be identified at the beginning of the contract such that they should also be aware of the operation & maintenance of the system fulfilling all other conditions as described in.

4. D. TECHNICAL SCOPE:

1. The work performance of the contractor & individual service staff will be assessed periodically (once in six months) and if the same is found unsatisfactory, the contractor should immediately replace the service staff / work force.
2. The Operation, Maintenance and Services shall be carried out as per the direction given by the Department from time to time.
3. The scope of services includes servicing and routine repair as per manufacturer's recommendations and ISRO-MCF in-charge direction, including minor repairs and replacement of parts and accessories.
4. The Contractor shall be responsible to maintain records and furnish data about mandatory tests i.e. insulation and earth tests of all the installation as per I.E. rules & IS. Specifications.
5. Liaison with MPSEB for arranging shutdown of HT lines for any maintenance work will be responsibility of the Contractor in consultation with MCF Engineer in-charge.

6. All dismantled/unused materials shall remain the property of Department and shall be the responsibility of the contractor to return back the same to MCF store periodically as required failing which recovery shall be made at prevailing market rates from the Contractor.
7. The Contractor shall be responsible for the equipment, materials handed over to him, and in case of any mishandling or missing the same shall be replaced or repaired at his own risk and cost.

4. E. SAFETY AND SECURITY:

1. No information regarding the MCF installations / work shall be given to any outsider either in oral or written. An undertaking for the same shall be provided by the contractor and his service staff at the beginning of the contract.
2. Contractor will keep watch on his employees and he will be liable for any pilferage/ loss to MCF due to acts of omission and commission by his employees. Similarly, liability for any compensation to outsiders on account of any act of omission and commission by the employees deployed by the contractor shall lie exclusively with him.
3. The service manpower deployed at site of services shall behave properly with the Department's Officials. In case of complaint about any misbehavior & or for improper working of any of service staff of Contractor is received or noticed, the concerned service staff shall be removed and to be suitably replaced by the contractor immediately failing which it shall be presumed that no manpower is provided and accordingly the corresponding charges will be deducted from the bill.
4. The Contractor and his work force shall strictly follow the security instructions and safety instructions as imposed by the Department from time to time.
5. Contractor to provide identity card with photograph to his employees, duly verified and attested. Contractor to indicate his name, place of work and duration of validity of card.
6. The workforce shall strictly maintain discipline, and any workforce falling short of department's expectations, shall be terminated from service by the contractor. For security reasons the contractor shall engage workers whose identity and particulars are known to the contractor and conduct to be certified. Contractor shall furnish the names and the residential address of the workers intended to be engaged for the work.
7. It shall be the responsibility of the Contractor for the safety of work force and maintain cleanliness of the installation / equipments.
8. The Contractor shall provide two sets of good quality uniform Pant & Shirt (Brand: Siyarams/S.Kumars/Gwalior) and electrical grade shoes PER YEAR and other safety gadgets like hand gloves, raincoats, umbrella etc., for the service staff engaged by him during Operation and maintenance services at site. The Uniform shall be provided in two different colours, one for odd dates and one for even dates and necessary instructions shall be given to users to wear the uniforms as above.
9. It is the responsibility of the Contractor to maintain a First Aid Box, containing followings with sufficient expiry date/shelf life
 - a) 6 small sterilized dressings

- b) 3 medium size sterilized dressings.
- c) 3 large size sterilized dressings.
- d) 3 large size sterilized burn dressings.
- e) Washable long band-aid.
- f) One (30 ml) bottle containing a 2% alcoholic solution of iodine.
- g) One (30 ml) bottle containing salvolalite having the dose and mode of administration indicated on the label.
- h) One snake bite lancet.
- i) One (30 gm) bottle of potassium permanganate crystals.
- j) One pair of scissors.
- k) One copy of first Aid leaflet issued by the Director-General, Factory Advice Service and Labour Institutes, Govt. Of India.
- l) A bottle containing 100 tablets (each of 5 grains) of aspirin
- m) Ointment for burns.
- n) A bottle of suitable surgical antiseptic solution.

5 LABOUR LAWS / REGULATIONS / STATUTORY LIABILITY:

- 5.1 Contractor shall be fully responsible for releasing payment to work force engaged by him within 7th of every following month.
- 5.2 The contractor is responsible for complying with all the relevant labour laws/regulations of Government of India / Government of Madhya Pradesh prevailing during the period. The Department shall in no way be held responsible for the failure from the Contractor's side to comply with the labour laws in respect of the work force engaged by him.
- 5.3 The book of accounts shall be maintained by the contractor as per applicable rules more specifically indicating the attendance, acquaintance of wages paid, PF account etc., and the department shall have right to inspect the records at any point of time and take necessary penal actions for non-compliance of these provisions.
- 5.4 The contractor shall pay wages not less than the minimum wages as prescribed by Ministry of Labour & Employment. If any revision in minimum wages made by Government during the currency of this contract, the same will be compensated at actual. On revision, the contractors shall increase the wages of the labour as per the new rates. The contractor shall indemnify the department with an undertaking to this effect. Any violations of these shall be viewed seriously and necessary penal actions shall be initiated
- 5.5 The contractor shall obtain a valid license under the contract labour (R&A) Act 1970 with revisions if any and the contract labour (Regulation and abolition) central rules 1971 with revision.
- 5.6 All statutory requirements under Minimum Wages Act, 1948, Payment of Wages Act, 1936, Workmen Compensation Act. 1923, EPF & MP Act 1952, Payment of Gratuity Act, 1972 ESI Act, 1948. The Contract Labour (R&A) Act, 1970, Payment of Bonus Act, 1965, Income Tax Act, Service Tax Act and all other applicable Act etc. shall be complied with by the contractor.

- 5.7 Contractor shall comply with all statutory requirements, rules, regulations, and notifications in relation to employment of his employees issued from time to time by the concerned authorities.
- 5.8 Contractor shall ensure payment of statutory prescribed minimum wages as applicable from time to time in the presence of authorized representative of MCF and maintain proper records of their timely disbursement. These records need to be preserved for a period of at least 3 years and should be made available even after the contract is over for any verification by the statutory MCF authorities.
- 5.9 In case the contractor fails to make payment of wages to his employees or remittance of contribution to the concerned authorities, the security deposit/ other dues under the contract can be utilized by MCF to discharge the liability of the contractor.
- 5.10 Contractor shall indemnify MCF against all claims and losses under various statutes or any civil or criminal law in connection with employees deployed by him.
- 5.11 The liability for any compensation on account of injury sustained by an employee of the contractor will be exclusively that of the contractor.
- 5.12 Contractor to obtain license under CL(R&A) act, 1970 and furnish a copy to ISRO, MCF authorities.
- 5.13 Contract awarded is liable for termination for any contravention of statutory provisions, without assigning any other reasons or any explanation or notice to the contractor.
- 5.14 Contractor shall maintain neatly, completely and legible registers, records, reports and returns for inspection by various authorities at short notice.

6. PROVIDENT FUND & EMPLOYEES STATE INSURANCE

- 6.1 The contractor in addition to the above is also fully / wholly responsible for the payment at Provident Fund (PF) and Employees State Insurance (ESI) formalities to be complied with the work force engaged by him and he should indemnify the department wholly/fully these implication / eventualities.
- 6.2 *Contractor shall pay the PF/ESI contributions regularly to the PF/ESI authorities and furnish the statement of fact before succeeding month and furnish necessary proof of payment.
- 6.3 The contractor shall comply with all the PF & ESI regulations as applicable, which shall be binding on the contractor. The actual amount only will be reimbursed on receipt (necessary proof issued by PF and ESI authorities for payment towards PF & ESI)
- 6.4 Every worker shall be provided with the PF contribution card (PF pass book) towards the payment made against each worker or the worker shall be provided with annual statement together with eligible interest periodically and a copy to be submitted to the Department.

The contractor shall equip himself to the latest changes of PF/ESI rules approved by various state and central legislatures and take suitable action.

- 6.5 Contractor to provide PF pass book to his employees and ensure payment of PF, EDLI, pension dues under EPF & MP Act, 1952 to the RPFC.
- 6.6 Contractor shall ensure payment of ESI contribution under ESI Act, 1948 and provide ESI member ship number to each employees.
- 6.7 Contractor shall produce proof of deductions as well as remittances of PF, EDLI, Pension, ESI contribution, administrative charges etc. wherever applicable and shall maintain proper records. A copy of deposit of each remittance shall be enclosed with the bill for claiming of payment.

7. PENALTY CLAUSE

- 7.1 In case of absence of contract manpower (of any level) payment shall be deducted as per stipulated wages, and in addition, a penalty of Rs.200/- per day shall be chargeable.
- 7.2 Contractor shall not permit continuation of shift duty by deployed manpower for more than Two successive shifts. Any violation of this shall attract a penalty of Rs. 200/- per case.
- 7.3 Any incident/case of indiscipline by contract manpower will be viewed seriously and any such incident/case reported shall attract a penalty of Rs. 200/- per case.

8. SHORT CLOSING/TERMINATION OF ORDER

- 8.1 Under normal circumstances, short-closing/termination of the Order/AMC is not foreseen. However, in case of continued non-performance of the Order/AMC resulting in inordinate delays in providing services in-spite of repeated written requests for meeting the service schedule as provided for in the Order, MCF reserves the right to terminate wholly or partly the Order by giving a notice of not less than one month.
- 8.2 If the contractor wants to stop his services, he should give minimum of Three months advance information to ISRO – MCF authorities in writing.

9. PAYMENT TERMS

- 9.1 The monthly bill / claim should be submitted to this office along with the valid PF and ESI contribution deposit documents before 5th of every succeeding month with details of attendance of the individuals in the prescribed format.
- 9.2 No Advance payment will be made.
- 9.3 Minimum Wages revised under minimum wages act of Government of India / Government of Madhya Pradesh shall be payable from time to time whichever is higher.
- 9.4 Pro – rata amount will be paid on monthly basis after the contractor submits necessary details and bills duly certified to MCF. Bills shall be addressed to Accounts Officer, MCF, Hassan & submitted to Engineer-in-charge, MCF, Bhopal.
- 9.5 Income tax, TDS, as applicable from time to time shall be recovered from monthly bill, necessary certificate will be provided by the Department Accounts section in due course.

10. SECURITY DEPOSIT

10.1 The Contractor shall provide a Bank Guarantee from a nationalized/scheduled bank in non-judicial stamp paper for 10% of the total contract value towards security deposit valid for a period of 2 years. This Security Deposit shall be returned only on successful completion of all the Contractual obligations or shall be adjusted / forfeited against non-fulfillment of any of the contractual obligation.

11. INDEMNITY

- 11.1. In the event of damages to Department's property or personal injury to MCF Contractor's personnel due to the negligence of the contractor's employees, the responsibility shall solely rest with the contractor. The Department shall not be responsible for any injury/loss of life to the contractor's personnel due to accidents / natural calamities, etc., at MCF, Bhopal premises.
- 11.2. In case of any accident occurs due to any reasons during duty hours within ISRO-MCF campus, CISF housing, scientist hostel and MCF housing complex to Contractor's work force, no extra payments shall be made to the Contractor and No claim what so ever nature will be given or paid on this account and Contractor is fully responsible for such eventualities and he should indemnify the Department from such happening.
- 11.3. The Contractor shall be responsible for the entire criminal, civil, liabilities arising during the contract period, and he should indemnify the ISRO – MCF from such implications/ eventualities/ happenings.
- 11.4. The Contractor shall observe the security regulations of the Department and any loss or damage incurred by the Department on account of the contractor's failure of any nature to observe the security regulations, it shall be to debit able to contractor's account.
- 11.5. The contractor shall make his own arrangement for transport, safety of their personnel, medical and other amenities for contractor's personnel deputed to MCF, against this order.
- 11.6. Any damage done to the existing installation, equipment or to the building particularly due to negligence shall be entire responsibility of Contractor to repair, rectify or replace the same at his own cost.
- 11.7. Please submit an indemnity bond on `100/- non-judicial stamp paper covering the following:
 - a) Contractor shall indemnify MCF, against any action, claim or proceedings relating to infringement of all or any of the prevailing laws like Workman's compensation Act 1923, Contract Labour (Regulation and Abolition) Act 1938, Industrial Disputes Act 1947, Employees' State Insurance Act 1952 during the currency of the order or any other Act specifically not mentioned.
 - b) Contractor shall also indemnify MCF, from claim for any injury/ damage/ death to any of their persons or third party during execution of work at MCF, etc against this order.
 - c) Undertaking to subscribe ESI & PF as per rules every month for service personnel engaged against this work order, maintain proper records and submit to the EIC.

d) To pay salaries to the work force within 7th of every following month.

12. FALL CLAUSE

The charges shall in no event exceed to the lowest charges at which you service the identical system to any other party during the period of this contract. If, at any time during the said period, you reduce the service charges of such items to any other customer, it shall be forth notified to us and the charges payable under the contract for servicing done after the date of coming into force of such reduction of service charges shall stand correspondingly reduced.

13. FORCE MAJEURE

Should a part or whole of services covered by this order be delayed in performance due to reasons of Force Majeure which shall include Lock-outs, strikes, riots, civil commotions, fire accidents, acts of God and war, stoppage of deliveries by Government, refusal of or non-receipt of import license for import items, the delivery period referred in their order shall be extended by a period(s) not in excess of duration of such Force Majeure. Each party undertakes to advise the other as soon as it becomes aware of the circumstances of such Force Majeure, so that actions under the provisions of this order can be mutually reviewed and agreed upon between Contractor and MCF. If the Force Majeure condition extends over a period of six months both the parties of the order shall mutually discuss and arrive at an agreement for continuation or termination of the contract.

14. ARBITRATION

In the event of any question, dispute or difference arising out of any terms and conditions of the order, the parties shall strive to find mutually acceptable solution, failing which, all questions, disputes or difference arising under or in connection with the order shall be settled through arbitration, (under conciliation and Arbitration Act of India 1996) through a person, nominated by Director, MCF. The award of the Arbitrator so appointed shall be final and binding on both the parties to this order.

15. APPLICABLE LAW AND INFRINGEMENT THEREOF

This order shall be governed by and interpreted and construed in accordance with laws of India. The department shall not be responsible if Contractor infringes the laws or statutes in force during currency of this order.

16. SERVICE REPORT

Service report shall be generated by the Contractor for having done the preventive maintenance work. The Service Report shall be signed by the contractor. The Service Report shall be in triplicate. Original to Purchase for records, duplicate to the EIC, MCF Bhopal and triplicate to the Contractor.

ANNEXURE # A

SCOPE OF WORK UNDER CONTRACT

Operation and Maintenance Of Electrical & AC Installation in round the clock shifts / General Shifts At ISRO – MCF Bhopal Main Campus, CISF Housing & Barrack, Scientist Hostel & MCF staff quarters at Ayodhya Nagar Bhopal.

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1. REQUIREMENT:

Providing of Operation Services in Round the Clock Shift (24/7) Totally for three shifts Operation for providing Continuous power supply. The operation Services includes Monitoring and Operation of 33 / 0.433 kV Substation associated with controls, switchgear, Diesel Generating sets of 3 x 500 kVA, 2 x 60 kVA two sets UPS system, 2 x 120 kVA & 2 x 160 kVA UPS system, Air- conditioning system, Split Air-Conditioning units, Fire fighting pumps, Domestic water supply system, Internal / External lighting system, Fire Alarm system etc.,

The Contractor has to provide CONTINUOUS operation Services without any break and to ensure trouble-free operation of all the above stated systems in Shift Duty for 24 hours in three shift operation as mentioned here in.

First Shift : From 0630 Hrs To 1330

Second Shift : From 1330 Hrs To 2130

Third Shift : From 2130 Hrs To 0630

2. MANPOWER:

The Contractor should ensure following Services for each shift as indicated here in.

2(i) SHIFT OPERATION:

Sub-Station Operator:	One Operator per shift
Air-Conditioning Operator:	One Operator per shift
Electrician	One Operator per shift
Helper	One helper per shift

2(ii) FOR GENERAL SHIFT :

Supervisor	One person
Air-Conditioning Operator:	One person
Electrician	Three person
Helper	Three person

2(iii) Additional manpower up to maximum limit of 3 Nos (different category or same category) shall be made available in real time depending upon the work load and payment shall be done on daily wages rate.

3. THE ESSENTIAL QUALIFICATION AND EXPERIENCE FOR VARIOUS CATEGORIES OF MANPOWER SHALL BE AS BELOW:

3 (i) SUPERVISOR:

The Contractor shall provide the supervisor compulsorily with all the required Guidelines before starting the contract. The person who works, as supervisor should have passed Diploma in Electrical or Diploma in Electrical & Electronics from Govt. recognized institution and shall have a practical experience of not less than **5 (five) Years or B.E with 2 years experience**, in a large industry or any Govt. Organisation. Supervisor should have adequate experience in the operation & maintenance of 33 KV Substation and Captive generating system. The person who provides such services should also have valid Industrial Supervisor license issued by local Electrical Inspectorate authorized to supervise the said electrical maintenance, fulfilling all the condition as per I.E. Rule 1956.

3(ii) SUB – STATION OPERATOR:

The person who works as Sub – Station operator: should be **ITI** in Electrical Engineering from any Govt. or Govt. recognized institution. They should have a practical experience of not less than **2 (Two) years** in 33 kV substation operation and captive generation sets.

3(iii) AIR – CONDITIONING SYSTEM OPERATOR/MECHANIC:

The person who works should have Air-Conditioning or mechanical Trade ITI Certificate from Govt. recognized institution. They should have a practical experience of not less than **2(Two) years**.

3(iv) ELECTRICIAN:

The person should have Electrical Trade ITI certificate from Govt. recognized institution. They should have a practical experience of not less than **2 (Two) years**. He should also have valid wireman license issued by local authorized Electrical Inspectorate, for the operation and maintenance of the said electrical equipment's & voltage level.

3(v) HELPER:

The services should be obtained from those having minimum **1 (One) year** working experience with Electrician in the field of Electrical and Air Conditioning systems. Should have minimum qualification upto 8th standard, and capable of reading & writing both Hindi & English. He should also be capable of expressing clearly in local official language Hindi.

3(vi) BRIEF DETAILS OF THE MAJOR INSTALLATIONS.

1. Out door receiving HT structure (33 / 0.433 kV)
2. Outdoor 1 MVA Distribution Transformer. (2 Nos)
3. Outdoor 1 MVA vacuum Interrupter. 33 kV (2 Nos)
4. Sub- station PCC Panel.
5. Power Distribution network with PCC's, MCC's and AVR's
6. 3 x 500 kVA Diesel generating Sets.
7. UPS System of 2 x 160 kVA, 2 x 120 kVA and 4 x 60 kVA
8. Plante type lead Acid battery banks of 200 AH and 300 AH
9. Air-conditioning main plant with multiple Ahu's (Chilled water type)
10. GLR for water with domestic and Fire fighting Pumps etc.,
11. Fire Alarm Systems.
12. Out-door and Indoor lighting.
13. Earthing system.
14. Electrical installations at CISF housing, MCF staff Quarters, Scientist Hostel.
15. Water pumping system at Scientist hostel and MCF housing.
16. Diesel Generator at Guest House and Visiting Scientist Hostel

4. BRIEF DESCRIPTION OF THE SYSTEM TO BE OPERATED AND MAINTAINED:

4(i) HT SYSTEM (INDOOR / OUT-DOOR)

- i. Operation, of 33 kV receiving structure, associated switchgear, and equipment, which are installed, as directed by Engineer In-Charge and as per manufacturer recommendations.
- ii. Operation of 33 kV Vacuum Circuit breakers and all associated control equipments' which are installed, as directed by Engineer In-charge and as per manufacturer recommendations.
- iii. Operation, maintenance & servicing of 33 kV / 0.433 kV Transformers and all associated control equipment's which are installed, as directed by Engineer In-charge and as per manufacturer recommendations.
- iv. Operation, of 33 kV VCB control Panels, Transformers and all associated control equipment's which are installed, as directed by Engineer In-charge and as per manufacturer recommendations.

4(ii) SUB- STATION:

- i. Operation and servicing of all PCC, MCC and Distribution Panels which are installed, as directed by ISRO – MCF in-charge and as per manufacturer recommendations.
- ii. Operation of ACB's SDSFUs, Contractors and other Power handling equipment's.
- iii. Operation & General maintenance and servicing of 3 x 500 kVA DG set as directed by MCF – ISRO In-charge and as per manufacturer recommendations.
- iv. Attending & verifying to make good any fault occurred in the system to normalize the power system. As directed by MCF – ISRO In-charge.

- v. Verifying the tripping of ELCBs and MCBs and attending the same for rectification including attending to making good of fuse off complaints.
- vi. Verifying the operations of APFC panel and maintaining the same.
- vii. Periodical checking and maintenance of all electrical installations such as Fire fighting pumps, Domestic pumps motor, garden pumps motors and motor starters etc.
- viii. Diagnosing the cable fault and rectifying the defects by providing straight through joints, end terminations etc., as directed by ISRO –MCF In-charge.

4(iii) UPS SYSTEM:

- i. Operation and recording of all UPS parameters in each shift, as directed by MCF – ISRO In-charge and as per manufacturer instructions.
- ii. Verification of UPS Battery Banks operation, maintenance and cleaning to be ensured as directed by MCF – ISRO In-charge and as per manufacturer instructions.

4(iv) OPERATION OF WATER SUPPLY & FIRE FIGHTING PUMP SYSTEM

- i. To verify the water level and operate pumps as per required condition.
- ii. Periodical operation of Fire fighting pumps for health check & to operate suitable Fire fighting pump (Electrical or Diesel operated) during emergency or as per the direction of the Engineer- In-charge.
- iii. To record and register Electrical complaints.

4(v) RESPONSIBILITIES OF THE AC PLANT OPERATORS (SHIFT OPERATIONS)

- i. Operating the chilled water plants and associated equipments as per the requirements in round the clock shifts to maintain the specified condition in the conditioned areas.
- ii. Monitoring the status/performance of the plant equipments.
- iii. Change over the units systematically as per stipulated timings.
- iv. Recording the temperature/pressure/current and other data in prescribed log sheet periodically.
- v. Carry out the routine maintenance as per prescribed maintenance schedule.
- vi. Recording the observations/defects/action taken to rectify the defects in the operation register.
- vii. Detecting and taking timely necessary action to rectify the defects.
- viii. Reporting the status of the plant on regular basis to supervisor.
- ix. Cleaning of all equipments.

4.(vi) MAINTENANCE SCHEDULE (GENERAL SHIFT)

(A) DAILY MAINTENANCE

- i. Checking the Make-up water line of the expansion tank and ensure the regular water supply.
- ii. Checking the chilled water pump gland leakage and tighten the gland packing if required.
- iii. Checking and ensure that chilled water pumps are running within the nominal pressure.
- iv. Checking the chilled water line valve operation.
- v. Checking the AHU damper motors operation.

- vi. Checking the compressor crankcase heaters operation.
- vii. Checking the oil level in compressor and chilled water pump bearing housing.
- viii. Checking the condenser fan operation.
- ix. Checking the tensions of all the belt drives and tighten if required.
- x. Checking and ensure that all thermometers and gauges are in good condition.
- xi. Checking the micro processor controller operation.
- xii. Checking for any Unusual sound/vibration of the equipments and rectify the same.
- xiii. Checking the condensate water drain line of all AHU' s and FCU' s.
- xiv. Cleaning of all the equipments.

(B) WEEKLY MAINTENANCE

- i. Cleaning the air filters.
- ii. Checking the expansion tank water condition.
- iii. Checking the V belts and replace if required.
- iv. Checking the pump couplings and replace the bush if required.
- v. Checking the chilled water pump gland packing and replace if required.
- vi. Top up the pump bearing housing oil if required.
- vii. Cleaning the plant rooms/AHU rooms.

(C) MONTHLY MAINTENANCE

- i. Checking the refrigerant line for leakage and rectify the leakage, top up the refrigerant if required.
- ii. Cleaning the condenser coil with water.
- iii. Cleaning the condensate water drain line of AHU and FCU' s.
- iv. Checking all equipments mounting and tighten the base bolts if required.
- v. Checking all the belt drives/couplings for proper alignment and realign if required.
- vi. Checking all the pulleys/couplings and tighten if required.

Above works to be carried out under supervision of supervisor.

(D) QUARTERLY MAINTENANCE

- i. Cleaning the chilled water line strainers.
- ii. Cleaning the Micron filters.
- iii. Checking the operation of all safety cutouts/controls and ensure the proper operations.
- iv. Cleaning of AHU/FUC coils.
- v. Combing of Condenser fins/AHU fins if required.
- vi. Checking the heater and humidifier operation.
- vii. Lubricating the motors/fans/blowers/Pumps bearings.
- viii. Checking the condition of chilled water pump bearing housing oil and charge the fresh oil if required.
- ix. Measure the air quantity delivered by AHU and Condensers.

4(vii) GENERAL MAINTENANCE:

- i. Replacing of burnt out or damaged switches, sockets, holders, switch boards, MCBs, ELCBs etc.,
- ii. Temporary wiring and lighting as directed by Engineer In-charge.

- iii. Dismantling of burnt pump motors, burnt ceiling fans, and burnt chokes of light fixtures and installing the same after repairs.
- iv. Fixing Geysers, boilers, repairing of geysers for the replacement of defective thermostat,
- v. Replacing the burnt chokes of street light fixtures and changing of fused bulbs in the fixture
- vi. Periodical maintenance of light fittings, street light fittings, ceiling fans, exhaust fans including repairs like replacement of fused bulbs and tubes, checking of chokes, capacitors, starters, holders, terminals, control gears, regulators etc.
- vii. Earth resistance measurements of each earth pits to be recorded as per the direction given by Engineer In-charge.
- viii. Preventive maintenance of above listed installations to be carried out in a well-planned manner with periodicity as detailed in general, as directed by Engineer In-charge.
- ix. Electrical complaints, other than the above mentioned shall also be executed by the contractor, as per the directions of Engineer In-charge.
- x. The work allotted shall be attended to, within 8 hours and reported to for its progress.
- xi. Preventive maintenance shall be effectively carried out in consultation with Engineer In-charge and as per Manufacturers recommendations.
- xii. To record & register the energy meters reading provided.

4(viii) THE CONTRACTOR SHOULD EXTEND SUPPORT FOR THE FOLLOWING:

- i. Preventive and Corrective maintenance of the system
- ii. Support during conducting Fire Alarm System maintenance
- iii. Break down maintenance if any
- iv. Augmentation of facilities.
- v. The workforce provided by the contractor can be used for other technical works at MCF as per the direction from Engineer-In –Charge, MCF-Bhopal
- vi. Co-ordination with external agencies like MPSEB, and IOC.

**SHIFT OPERATION OF ELECTRICAL INSTALLATION AT ISRO
MCF BHOPAL - MAIN CAMPUS (PART-I)**

(A) ABSTRACT OF COST			
Sr. No.	Description	Qty	Amount Rs/-
1	Round the clock shift operation: Three shift operation for providing continuous power supply. Monitoring & Operation of 33 / 0.433 kV substation, Diesel generating sets, Domestic & Fire fighting pump, Air-conditioning system, UPS system etc.	24 months	

(B) Man Power Deployment At MCF main campus		
Shift	Time	Manpower
First Shift	0630 Hrs to 1330 Hrs	Sub-Station operator, A/C Operator, Electrician & Helper
Second Shift	1330 Hrs to 2130 Hrs	Sub-Station operator, A/C Operator, Electrician & Helper
Third Shift	2130 Hrs to 0630 Hrs	Sub-Station operator, A/C Operator, Electrician & Helper

(C) Man power requirement per year				
Man power	Per Shift	No. of Shift	No. of Days	Net Working Days
1. Sub-Station operator	1	3	365	365
2. A/C Operator	1	3	365	365
3. Electrician	1	3	365	365
4. Helper	1	3	365	365

**ANNUAL Maintenance OF ELECTRICAL INSTALLATION AT ISRO
MCF BHOPAL Main Campus (PART-II)**

(A) ABSTRACT OF COST			
Sl No.	Description	Qty	Amount Rs/-
1	Routine Maintenance of Electrical Installation at MCF main campus (non operational & operational areas) including Periphery and Street lighting system, Maintenance of 33 kV outdoor switching system, structure, Transformer, Control system, UPS Battery Bank, DG starting batteries & Sub station control batteries, Preventive maintenance of panels & associated switchgear, and any other related works including equipment cleaning at ISRO – MCF, providing continuous power supply & maintenance of CISF Housing Colony, Barrack, Scientist Hostel & Staff Quarters at Ayodhya Nagar as per specified in the enclosures.	24 months	

(B) Man Power Deployment At MCF main campus		
Shift	Time	Manpower
General Shift	09.00 hrs to 17.30 hrs	Supervisor (1 No.)
General Shift	09.00 hrs to 17.30 hrs	Air Conditioning Operator / Mechanic (1 No)
General Shift	09.00 hrs to 17.30 hrs	Electrician (3 Nos.)
General Shift	09.00 hrs to 17.30 hrs	Helper (3 No.)

(C) Man power requirement per year					
Man power	Per Shift	No. of Shift	No. of Days	No. of OFF days[^]	Net working Days
1. Supervisor	1	1	365	55	310
2. Airconditioning Operator / Mechanic	1	1	365	55	310
2. Electrician	1	1	365	55	310
3. Helper	1	1	365	55	310

[^] Sundays are given OFF's. Declared National Holidays like 26th January, 15th August and 2nd October will be given OFF's.

ANNEXURE – B

PRICE ANALYSIS FORMAT (FOR REFERENCE ONLY)

1. RATE ANALYSIS					
Item No. 1 Supply of					
Note: The Wages to be paid shall be as per Minimum Wages Act as applicable for construction or Maintenance / building operations. Present Minimum wage for 'B' class City as on 1 st April 2013 is Rs.00. This is to be considered in the rate analysis while quoting the tender					
Sl. No.	Description of item	Quantity	Unit	Rate	Amount in Rs.
1.1	Supply of	1	Man day	Un-priced bid	Un-priced bid
1.2	Contractor Profit on item SI No. 1.1 @%				Un-priced bid
1	<u>Grand Total</u>				Un-priced bid
2	<u>Say Rs Per Man day</u>				

Note:

The rate Quoted under SI No. 1.1 shall be paid to their Service provider and shall not be less than Minimum Wages as mentioned above

ABSTRACT OF TOTAL AMC OF ELECTRICAL WORKS AT MCF BHOPAL
(For Reference only – DONOT SUBMIT THE CALCULATION SHEET)

Sl. No	Detail of work	Period	Total Amount in `
1	A. Three Shift operation Of Electrical Installation At ISRO - MCF Main Campus, At Ayodhya Nagar Bhopal	24 months	
2.	B: Annual Maintenance Of Electrical Installation At ISRO - MCF Main Campus, CISF Housing Colony & Barrack, Scientist Hostel & MCF Staff Quarters At Ayodhya Nagar Bhopal	24 months	
	Total AMC Value		
	Provident Fund Employer Contribution (13.61 %)		
	ESI Employer Contribution (4.75 %)		
	Uniform Charges & Shoe Charges		
3	Contractor's profit		
	TOTAL		