

**BCG VACCINE LABORATORY
CHENNAI**

Tender No. D -21029 / 02 / 2019-20 (Stores) dated 15.10.2020

**Tender Document for Supply & Installation of 11 KVA 630 Amps.
RMG Unit at BCGVL, Chennai**

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Last Date & Time for Bid Submission : Till 02.00 p.m. on 09.11.2020

Date & Time of Technical Bid Opening: At 03.00 p.m. on 09.11.2020

**BCG VACCINE LABORATORY
CHENNAI**

To

M/s.....

.....

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Dear Sir(s),

**Sub. : Inviting Quotations for Supply & Installation of 11 KVA 630 Amps. RMG Unit at
BCGVL, Guindy, Chennai**

BCG Vaccine Laboratory, invites sealed bids under Two Bid System (Technical and Commercial Bid) for **Supply & Installation of 11 KVA 630 Amps. RMG Unit** at BCGVL, Guindy, Chennai

Important Dates : -

a.	Bid Reference	Tender No: D-21029/ 02 /2019-20 (Stores)
b.	Date and time of receipt of Tender	Till 02.00 p.m. on 09.11.2020
c.	Date and time for Opening of technical Bid	At 03.00 p.m. on 09.11.2020
d.	Date and time for Opening of Financial Bid	To be intimated to successful bidders, who qualify in Technical Bid.
e.	Type of Tender	Two Bid System
f.	Earnest Money Deposit / Bid Security	Rs. 50,000/- in the form of Bank Guarantee
g.	Time of Completion	90 (Ninety) Days. The date of commencement shall be reckoned from the date of work order issued to the successful Tenderer.
h.	Validity of Tender	120 days
i.	GeM Registration	Successful Tenderer should provide GeM Seller ID for award of Contract / placement of order.

The Tender document comprises of the following sections:

Part I (Technical Bid)

- Section I : Bidder's Qualification Criteria (BQC), Bid Evaluation Criteria (BEC) and Bid Rejection Criteria (BRC)
- Section II : General conditions of the contract (GCC)
- Section III : Special Condition of Contract - Scope of work
- Section IV : Formats for Technical Bid
- Section V : BG format for Earnest Money Deposit
- Section VI : BG format for Security deposit / performance security

Part II (Price Bid)

Bidders shall submit their commercial offer.

Part-I: Technical Bid

Technical Bid includes all documents that are called for as per Bid Qualification Criteria of this Tender Document. All the pages of this tender document should be duly signed and affixed with seal of the firm towards acceptance of all terms and conditions of all sections of the tender document.

An 'Earnest Money Deposit / Bid Security' (EMD/ BID SECURITY) shall be enclosed along with the Technical bid by way of Bank Guarantee (BG) issued by any nationalized/scheduled bank as per enclosed format towards EMD/ BS (Earnest Money Deposit / Bid Security). However, such BG shall be valid for a period of minimum 120 days from the due date of bids submission.

Part-II: Price bid

Price Bid shall be submitted in the same format as attached along with this Tender document duly signed and affixed with seal of the firm. The quoted value in Rupees in digits should also be written in words. In case of discrepancy between value in digits and value in words, BCGVL shall consider the value written in words ONLY.

The details of Bidder Qualification Criteria (BQC) are given in the Section I. Bidders are advised to refer to the same. If required, Bidders should get clarified of their doubts in understanding the tender documents with BCGVL and subsequently submit their quotes/tenders to BCGVL. **In order to familiarize with nature and quantum of job, it is suggested to all Bidders / Tenderers to visit the location of operations before submission of their quotes and should get clarified all their doubts.**

Price bid envelope Contains price bid format to be quoted by the Bidders as per their choice depending on their experience of work handled. After mentioning their quotes against the items in the format, the document shall be signed, stamped with firm name and the price bid document shall be kept inside the Price Bid envelope and the envelope to be sealed with gum properly.

Technical and Commercial bids sent shall be sealed separately and enclosed in a single sealed big size envelope and to be mailed to BCGVL writing the Tender No. and Due date on top of the envelope. The Bidder should ensure that his quotation reaches BCGVL on or before the Due date as mentioned in BCGVL Tender Document for consideration. The bid envelop can be sent to BCGVL on address:

**The Director,
BCG Vaccine Laboratory,
33 Feet Road, off Mount Road,
Guindy, Chennai – 600 032**

or could be dropped in Tender Box kept at BCGVL, Chennai.

BCGVL reserves the right to reject any or all bidder's quotes/tenders or to accept in part of offers given by Bidders / Tenderers without assigning any reason thereof. Decision of BCGVL in this regard will be final and binding on all the Bidders/Tenderers.

Thanking you,
Encl: As above


ADMINISTRATIVE OFFICER
FOR DIRECTOR
BCGVL, Chennai

PART -1

TECHNICAL BID

SECTION - I

1. Bidders' Qualification Criteria

- a) The bidder should have average annual turnover of not less than Rs. 100 Lakhs during the last 3 years, ending 31st March of the previous financial year. Relevant documentary evidence, i.e., Profit and loss account for turnover details certified by Chartered Accountant to be submitted.
- b) The bidder shall have at least 3 years experience of successfully handling any Central Govt. /State Govt. / Public sector undertaking company. Bidders should furnish copies of work orders / agreement issued by respective organizations to this effect.
- c) The bidders who are blacklisted by BCGVL /Central Govt. /State Govt. /Public sector undertaking are ineligible to participate in this tender. Bidder should attach notarized declaration to confirm his eligibility to this effect.
- d) The bidders shall be "A" Grade Certified CPWD Contractor.

2. Bid Evaluation Criteria

- a) The bidder shall accept to the technical specification & scope of work given in the tender.
- b) Technically acceptable bids shall be evaluated on overall L1 basis (i.e lowest landed cost to BCGVL).

3. Rejection Criteria:

1. Offers received after the due date / time will be rejected.
2. Non-compliance to any of BQC will be liable for rejection.
3. Non adherence to technical / commercial terms and incomplete bids and bids in deviation to tender conditions will be liable for rejection.

Important notes

- a) BCGVL reserves the right to accept or reject unworkable rates of any or all tenderer at any stage of the tender evaluation process at sole discretion of BCGVL without assigning any reason thereof.
- b) Successful Tenderer should provide GeM Seller ID for award of contract / placement of order.

SECTION – II

GENERAL CONDITIONS OF CONTRACT (GCC)

1. GENERAL GUIDELINES

- a) Bidders shall submit tender in the prescribed format supplied by BCGVL only.
- b) Bidder shall strictly adhere to the terms & conditions and specifications prescribed by BCGVL. Any deviations from the terms and conditions of the Tender Enquiry will not be accepted by BCGVL and will lead to technical disqualification.
- c) All entries in the tender must be written in permanent ink or typewritten without use of eraser or overwriting. Corrections if any should be attested under the full signature of the Bidder.
- d) All the Rates given in the Tender must be expressed both in words and in figures and in case of difference between the two, the rates given in words would be final and considered correct.
- e) All Bidders are required to read the terms & conditions of this Tender document carefully and return one set duly signed on each page by them as token of having read, understood and accepted the terms & conditions along with information called for by BCGVL.
- f) All Bidders are required to give complete details in the Proforma attached.
- g) Bidders are suggested to visit BCGVL before submitting their quotations during working hours, i.e. between 10.00 am and 03.00 pm.

1.1 EARNEST MONEY DEPOSIT / BID SECURITY:

- a) Tender submitted without requisite amount of EMD/ BID SECURITY will be rejected.
- b) No interest shall be payable on Earnest Money Deposit / Bid Security.
- c) The bidder registered with NSIC for the item tendered and PSU'S are exempted from payment of EMD/ BID SECURITY.
- d) EMD/ Bid Security shall be paid by bidders in the form of Demand draft or Pay Order drawn on Scheduled Bank in favour of Pay & Accounts Officer, Ministry of Health & Family Welfare, Chennai or Bank Guarantee (BG) in prescribed enclosed format and issued by any scheduled / Nationalised Bank with a validity period of 120 days from the bid closing date.

2. ACCEPTANCE OF TENDER

BCGVL reserves the right to accept or reject in part or whole, any or all the tenders received without assigning any reason, whatsoever. BCGVL is not bound to accept the lowest tender. The decision of BCGVL in this regard shall be final and binding on all bidders.

3. COMMERCIAL TERMS

3.1 SECURITY DEPOSIT / PERFORMANCE SECURITY

- a) Successful Bidders shall be required to furnish security deposit / performance security within 15 days of issuance of Work order by BCGVL and before commencement of work. Amount of Security deposit / performance security (SD) shall be 10% of the work order value. The Security Deposit shall be deposited by successful bidder in the form of Bank Guarantee. The Bank Guarantee shall be drawn on any Nationalized / Scheduled Bank as per standard Proforma provided by BCGVL and shall remain valid for a period of sixty days beyond maximum possible validity period of the contract work order.
- b) BCGVL shall not pay any interest on security deposit / performance security under this contract.
- c) BCGVL is entitled without being bound to adjust the whole or any portion of this Security Deposit / performance security towards the recovery of any amount due from the successful bidder under this or any other contract with BCGVL.
- d) BCGVL is entitled to recover any loss / claim and / or any non-compliance of the agreement, against the SD deposited of the successful bidder. Any loss / claims / damages higher than SD amount will be recovered from payments to be made by BCGVL to the successful bidder under this contract or deposits made and / or payments due to the successful bidder under any other contract with BCGVL.
- e) The security deposit / performance security (SD) shall be refunded to the successful bidder after completion of this contract satisfactorily.

3.2 TERMS OF PAYMENT:

As per GFR

4. WARRANTY CLAUSE:

Over and above the warranty guaranteed by the seller of the equipments/instruments, the successful bidder shall provide warranty for a period of 24 months from the date of commissioning of the plant.

5. FORCE MAJEURE CLAUSE

If, at any item during the continuance of the contract the performance in whole or part by either party of any obligation under the contract shall be prevented or delayed by reasons of war, hostility acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts or acts of God (hereinafter referred to as events) then provided notice of the happenings of any such events if given by either party or the other within twenty one days from the date of occurrence thereof, neither party shall by reasons of such event, be entitled to terminate the contract nor shall either party have any claim for damage against the other whether in respect of such non-performance or delay in performance.

Deliveries or acceptance of deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist and the decision of

BCGVL as to whether the deliveries or acceptance of deliveries have to be so resumed or not shall be final and conclusive provided further if the performance in whole or part or any obligation under the contract is prevented or delayed by reasons of any such event for period exceeding 60 days either party may at its option terminate the contract.

6. ARBITRATION CLAUSE

Except, as otherwise provided elsewhere in the contract, if any dispute, difference, question, or disagreement arises between the parties hereto or their respective representatives or assignees, at any time, in connection with, meaning, operation, effect, interpretation or out of the contract or breach thereof, the same shall be referred to decided by an Arbitrational Tribunal consisting of three arbitrators. Each party shall appoint one arbitrator and arbitrators so appointed shall appoint third arbitrator who will act as Presiding arbitrator. Subject as aforesaid the Indian Arbitration and Conciliation Act, 1996 shall apply to the arbitration proceedings under the Contract.

7. JURISDICTION

The successful bidder, hereby, agrees that the Courts situated in Chennai / Tamilnadu alone shall have the jurisdiction to hear and determine all actions and proceedings arising out of this contract. This agreement is subject to the special conditions stipulated in our schedule and issued work Order and subsequent amendments, if any, notified from time to time.



SECTION - III

CONVERSION OF 2 NOS OF DP STRUCTURE TO 11 KV OUTDOOR RMG AT BCGVL, GUINDY, CHENNAI

BCGVL has sanctioned load of 1025 KVA fed through 2 nos transformers. At present the 11 KV supply is received and metered on a 2-pole outdoor structure and fed to the load through a 11 KV outdoor DP structure. As there is frequent interruptions in the 11 KV supply due to rain bird fault etc, we are planning to install a 11 KV outdoor RMG by replacing the existing 11 KV 2-pole and DP structures.

At present there is a free space available beyond the DP structure yard measuring 5 Mtrs x 5 Mtrs. Single Line Drawing for conversion of 11 KV 2 Pole EB and DP structure BCG Lab to 11 KV Outdoor RMG at BCG Vaccine Lab and proposed RMG Yard at BCG Vaccine Lab is enclosed as Annexure I & II.

SCOPE OF WORK:

The scope of work / service shall include but not limited to,

1. Preparation of the RMG yard by building a brick work all round to retain the soil.
2. Preparation of 11 KV RMG mounting platform with RCC and brick work. (Concrete bed 1½ feet depth and 1½ height from the ground level).
3. Supply and installation of 11 KV RMG as per technical specifications
4. Installation, testing and commissioning of 11 KV RMG
5. Spreading of 40mm blue metal in the yard as required
6. Liaisoning with TANGEDCO for converting the 2-pole , DP structure to 11 KV RMG (Necessary application and letters will be provided by BCGVL as required by TANGEDCO). Follow up with MRT for commissioning of RMG
7. Making wire mesh panel fencing for the RMG yard with necessary gate
8. Supply and laying of 3x185 Sqmm aluminium armoured XLPE cable from RMG to existing 11 KV 3-panel indoor switch board
9. Supply and installation of 1.1 KV 3x2.Sqmm copper armoured for feeding control supply to RMG from the DB in the building
10. End terminations of 11 KV cable at RMG and indoor panel sides with heat shrinkable cable jointing kits
11. Providing cable markers along the route of 11 KV cable
12. Providing earth electrodes for body earthing of RMG and earthing of fencing with 50x6mm copper earth strip for interconnections
13. Removal of the existing DP structure after commissioning of RMG
14. Removal of TANGEDCO 2- pole structure, if requested by TANGEDCO and to be handed over to TANGEDCO.
15. Removal of existing fencing of the 2-pole and DP structure yard
16. Providing danger board and other safety items for the RMG yard.
17. Necessary drawing preparation / submission/follow up, from the CEA/TNEB/TNEB metering section.
18. Necessary supporting documents will be provided by BCGVL.
19. Installation of power from TNEB source to (HT) RMG unit is completely vendor scope.
20. If TNEB suggest some trip system at the RMG, the cost is excluded in the scope.

Makes of items recommended

- | | |
|--------------------------------|-----------------------------|
| 1. 11 KV outdoor RMG | ABB |
| 2. 11 KV cable | Polycab, Havells, Apar, KEI |
| 3. 1.1 KV control cable | Polycab, Havells, Apar, KEI |
| 4. 11 KV cable termination kit | Reychem, M-seal |
| 5. Protective relays | Alsthom, CG, Siemens |
| 6. 11 KV CT and PT | Kappa, Kalppa |
| 7. SPD | Mersen |

The company can visit the site before submitting the quote. The company should get the approval from BCGVL before starting the fabrication work. All the spares should be approved makes of the TANGEDCO.

TECHNICAL SPECIFICATIONS 11 KV RMG FOR OUTDOOR INSTALLATION

1.0. SCOPE

Design, Engineering, Manufacture, assembly, Stage testing, testing before supply and delivery at site of Ring Main unit, site testing and commissioning of outdoor type RMG consisting of 2 nos of load break air insulated switches and 1 no VCB

1.1 This Specification provides for design, manufacture, inspection and testing before dispatch, packing and delivery F.O.R.(Destination) of air insulated RMG with necessary accessories and auxiliaries equipments and mandatory spares, described herein and required for their satisfactory operation.

1.2. The objective of the RMG is for extremely small construction width, Compact, maintenance free, independent of climate, easy installation, operational reliability, Safe and easy to operate, minimum construction cost, minimum site work and minimum space requirement.

1.3. The RMG shall conform in all respects to high standards Of Engineering design, workmanship and latest revisions of relevant standards at the time of offer and purchaser shall have the right to reject any work or material which in his judgment is not in full accordance therewith.

1.4. The type of the 11KV circuit breaker shall be VCB and insulating medium for load break isolators, Earth switch, 11 KV Buses and other associated equipments should be air.

2.0 GENERAL

The Ring Main gear shall be installed at 11 KV supply point to the building with EB metering arrangements. The RMG shall consists of the following combinations of load break switches and Circuit breakers for a nominal voltage of 11 KV using air as insulating and VCB as arc quenching medium.

The RMG shall be of single bus bar air insulated indoor, tropicalised metal enclosed type. The RMG metal parts shall be of high thickness high tensile steel which must be grit/short blasted, thermally sprayed with Zinc alloy, phosphate and subsequently painted with polyurethane based powder paint, the overall paint layer thickness shall be not less than 150 microns.

Relevant IE rules for clearances, safety and operation inside the enclosure shall be applicable. All live parts except for the cable connections shall be air insulated.

The cubicle shall be metal enclosed with a sheet steel of high thickness and provided with a pressure relief arrangement away from operator.

The unit should consist of 3 panels switch board floor mounted, out of which first and third panel will be fitted with 11 Kv load break isolators and middle panel fitted with 11 Kv630A 26.2 Ka VCB

The enclosure for switchgear and metallic RMG housing shall have a design such that in the event of an internal arc fault, the operator shall be safe. This should be in accordance with IEC 298. For outdoor application, the RMG should have fully gasketed double door and with rain protection canopy.

Suitable temperature rise test on the RMG with enclosure shall be carried out & test reports shall be submitted with tender for technical bid evaluation.

Each panel shall be identified by an appropriately sized label, which clearly indicates the functional units and their electrical characteristics.

The switchgear and switchboard shall be designed so that the position of the different devices is visible to the operator on the front of the switchboard and operations are visible as well.

The entire system shall be totally encapsulated. There shall be no access to exposed conductors. In accordance with the standards in effect, the switchboards shall be designed so as to prevent access to all live parts during operation without the use of tools.

Suitable lightening arrester to be provided. Existing 1 no. of BCGVL double pole structure have to be taken by the firm and the cost of the same have to be observed while calculating the cost of the project.

Suitable shed (metal sheet) to be provided to avoid direct exposure to sun and rain.

Follow up activities and getting approval from TANGEDCO/ Metering division is the responsibility of the contractor.

3.0 STANDARDS

Unless otherwise specified elsewhere in this Specification, the RMG, Switchboard (Switchgear), Load break isolators, Instrument Transformers and other associated accessories shall conform to the latest revisions and amendments thereof of the following standards.

- 1) IEC 60 298/IEC 62 271-200/IS 12729:1988 - General requirement for
Metal Enclosed Switchgear
- 2) IEC60129/IEC62271-102/IS 9921 - Alternating current disconnection's
(Load break isolators) and earthing switch
- 3) IEC 62 271-100/IEC 60 056/IS 13118:1991 - Specification for alternating
IEC 62 271-200 current circuit breakers.
- 4) IEC 62 271-1/IEC 60694 - Panel design, Vacuum/SF6 Circuit Breakers
- 5) IEC 60044-1/IEC 60185/IS 2705:1992 - Current Transformer
- 7) IEC 60265/IS 9920:1981- High voltage switches.
- 8) IEC 60529/IS 13947(Part-1) - Degree of protection provided by
Enclosures for low voltage switchgear and
Control gear.
- 9) Indian Electricity Rules

Equipment meeting with the requirements of any other authoritative standards, which ensures equal or better quality than the standard mentioned above shall also, be acceptable. If the equipments, offered by the Bidder conform to other standards, salient points of difference between the standards adopted and the specific standards shall be clearly brought out in relevant schedule. In case of any difference between provisions of these standards and provisions of this specification, the provisions contained in this specification shall prevail. One copy of such standards with authentic English Translations shall be furnished along with the offer. (Hard copy)

4.0. THE STANDARDS MENTIONED ABOVE ARE AVAILABLE FROM:

REFERENCE/ ABBREVIATION	NAME AND ADDRESS FROM WHICH THE STANDARDS ARE AVAILABLE
IEC	INTERNATIONAL ELECTRO-TECHNICAL COMMISSION ISI
ISO	INTERNATIONAL STANDARD ORGANISATION

5.0. CLIMATE CONDITIONS

The climatic conditions under which the equipment should operate satisfactory are as under:

Maximum ambient air temperature	: 45 deg. C
Minimum ambient air temperature	: 10 deg.C
Maximum daily average ambient air temperature	: 40 C
Maximum humidity	: 100%
Altitude above M.S.L. (maximum)	: 1000 meters
Average annual rainfall(mm)	: 925
Max. wind pressure(Kg/Sqmm)	: 200
Seismic level(Horizontal accn.)	: 0.3 g
Isoceraunic level(Days per Year)	: 50
Average thunder storm days per annum	: 50

6.0. RMG outdoor METAL CLAD

The RMG enclosure must be a metallic, it follows an industrialized process of manufacturing. The RMG shall be of single bus bar air insulated indoor, tropicalised and metal enclosed type. The RMG metal parts shall be made of high thickness high tensile steel which must be grit/short blasted, thermally sprayed with Zinc alloy, phosphate and subsequently painted with polyurethane based powder paint, the overall paint layer thickness shall be not less than 150 microns. The rating of enclosure shall be suitable for operation on three phase, three wire, 11 KV/33 KV, 50 cycles, A.C. System with short-time current rating of 26.2KA for 3 seconds with Panels.

7.0. ISOLATORS (LOAD BREAK TYPE)

The load break isolators for Incoming and Outgoing supply must be provided and the load break isolators. The load break isolators shall consist of 630/800/1250 Amp fault making/load breaking spring assisted ring switches, each with integral fault making earth switches. The switch shall be naturally interlocked to prevent the main and earth switch being switched 'ON' at the same time. The selection of the main and earth switch is made by a lever on the facia, which is allowed to move only if the main or earth switch is in the off position. The load break isolators should have the facility for future remote operation. Each load break switch shall be of the triple pole, simultaneously operated, non automatic type with quick break contacts and with integral earthing arrangement.

The VCB for the controlling of distribution transformer must be provided inside a separate panel.

The Vacuum circuit breaker must be a spring assisted three positions with integral fault making earth switch. The selection of the main/earth switch lever on the facia, which is allowed to move only if the main or earth switches is in the off position.

The manual operation of the circuit breaker shall not have an effect on the trip spring. This should only be discharged under a fault (electrical) trip; the following manual reset operation should recharge the trip spring and reset the circuit breaker mechanism in the main off position.

The circuit breaker shall be fitted with a mechanical flag, which shall operate in the event of a fault (electrical) trip occurring. The 'tripped' flag should be an unambiguous colour differing from any other flag or mimic.

Both the circuit breaker and ring switches are operated by the same unidirectional handle.

The protection on the circuit breaker shall comprise of the following components: The circuit breaker unit fitted with 3 class X protection CT's, a low burden trip coil and auxillary switch assembly allowing the use of a **IDMT protection relays (Numeric)** over current and earth fault element shall be Definite Time type relay. The relay should be housed in the metering cubicle. A facility of provision for the delay of transformer in-rush current shall be provided on relay to avoid nuisance tripping.

8.0. CABLE BOXES

All the cable boxes shall be air insulated suitable for dry type cable terminations. The cable boxes at each of the two ring switches and the circuit breaker shall be suitable for accepting 11 KV/33 Kv XLPE cable of suitable size mentioned in the tender. If the breaker type is VCB/SF6 CB, necessary **surge arrestors** should be provided at the cable side of the isolators. Necessary Right angle Boot should be supplied to the cable terminations.

9.0. CABLE TESTING FACILITY

It shall be possible to test the cable without opening the cable boxes.

10.0. VOLTAGE INDICATOR LAMPS AND PHASE COMPARATORS

The RMG shall be equipped with a voltage indication to indicate whether or not there is voltage on the cable. There should be a facility to check the synchronization of phases with the use of external device. It shall be possible for the each of the function of the RMU to be equipped with a permanent voltage indication as per IEC 601958 to indicate whether or not there is voltage on the cables.

11.0. WIRING & TERMINALS:

The wiring should be of high standard and should be able to withstand the tropical weather conditions. All the wiring and terminals (including take off terminals wiring for future automation, DC, Control wiring), Spare terminals shall be provided by the contractor. The wiring cable must be standard single-core non-sheathed, Core marking (ferrules), stripped with non-notching tools and fitted with end sleeves, marked in accordance with the circuit diagram with printed adhesive marking strips.

The wiring should be of high standard and should be able to withstand the tropical weather conditions. All wiring shall be provided with single core multistrand copper conductor wires with P.V.C insulation and shall be flame retardant low smoke type.

The wiring shall be carried out using multi-strand copper conductor super flexible PVC insulated wires of 650/1100V Grade for AC Power, DC Control and CT circuits. Suitable colored wires shall be used for phase identification and interlocking type ferrules shall be provided at both ends of the wires for wire identification. Terminal should be suitably protected to eliminate sulphating. Connections and terminal should be able to withstand vibrations. The terminal blocks should be stud type for controls and disconnecting link type terminals for CT leads with suitable spring washer and lock nuts.

Flexible wires shall be used for wiring of devices on moving parts such as swinging Panels (Switch Gear) or panel doors. Panel wiring shall be securely supported, neatly arranged readily accessible and connected to equipment terminals, terminal blocks and wiring gutters. The cables shall be uniformly bunched and tied by means of PVC belts and carried in a PVC carrying trough.

The position of PVC carrying trough and wires should not give any hindrance for fixing or removing relay casing, switches etc., Wire termination shall be made with solder less crimping type of tinned copper lugs. Core identification plastic ferrules marked to correspond with panel wiring diagram shall be fitted with both ends of each wire. Ferrules shall fit tightly on the wire when disconnected. The wire number shown on the wiring shall be in accordance with the IS.375.

All wires directly connected to trip circuits of breaker or devices shall be distinguished by addition of a red color unlettered ferrule.

Inter-connections to adjacent Panels (Switch Gear) shall be brought out to a separate set of Terminal blocks located near the slots or holes to be provided at the top portion of the panel. Arrangements shall be made for easy connections to adjacent Panels (Switch Gear) at site and wires for this purpose shall be provided and bunched inside the panel. The bus wire shall run at the top of the panel. Terminal block with isolating links should be provided for bus wire. At least 10% of total terminals shall be provided as spare for further connections. Wiring shall be done for all the contacts available in the relay and other equipment and brought out to the terminal blocks for spare contacts. Color code for wiring is preferable in the following colours.

Voltage supply	Red, Yellow, Blue for phase and Black for Neutral
CT circuits	similar to the above
DC circuits	Grey for both positive and negative
250V AC circuits	Black for both phase and Neutral
Earthing	Green

The wiring shall be in accordance to the wiring diagram for proper functioning of the connected equipment. Terminal blocks shall not be less than 650V grade and shall be piece-molded type with insulation barriers.

The terminal shall hold the wires in the tight position by bolts and nuts with lock washers. The terminal blocks shall be arranged in vertical formation at an inclined angle with sufficient space between terminal blocks for easy wiring.

The terminals are to be marked with the terminal number in accordance with the circuit diagram and terminal diagram. The terminals should not have any function designation and are of the tension spring and plug-in type.

12.0. EARTHING

All metal parts of the switchgear which do not belong to main circuit and which can collect electric charges causing dangerous effect shall be connected to the earthing conductor made of copper having CS area of minimum 75 mm². Each end of conductor shall be terminated by M12/equivalent quality and type of terminal for connection to earth system installation. Earth conductor location shall not obstruct access to cable terminations.

The following items are to be connected to the main earth conductor by rigid or copper conductors having a minimum cross section of 75 mm² (a) earthing switches (b) Cable sheath or screen (c) capacitors used in voltage control devices, if any.

All metallic cases of the relays, instruments and other panel mounted Equipment's shall be connected to the earth bus by independent copper wires of size shall be made of IEC/IS standards. The colour code of earthing wire shall be green. Earthing wires shall be connected on the terminals with suitable clamp connectors and soldering shall not be permitted.

13.0. ACCESSORIES & SPARES:

The following spares and accessories shall be supplied along with the main equipments at free of costs. This shall not be included in the price schedule.

- 1) Charging lever for operating load break isolators & circuit breaker of each RMG.
- 2) Any other spares & Tools, which are all essentially required at the time of emergency and routine maintenance.

Provision shall be made for padlocking the load break switches/ Circuit breaker, and the earthing switches in either open or closed position with lock & master key.

14.0. TECHNICAL SPECIFICATION FOR RMU

I. 11 KV Bus Bar

Type of material	: Copper
Current Carrying Capacity	: 630Amps.
Short time rating current for 3 secs.	: 26.2 KA for 3 seconds
Insulation of bus bar	: Air
Bus bar connections	: Anti-oxide grease

II. Parameters for Switch Gear of DT and load break isolators

Type	: Metal enclosed
No of Phases	: 3
No. of poles	: 3
Rated voltage	:12 KV
Operating voltage	:11 KV (+10% to -20%)
Rated lightning impulse withstand voltage	: 75 KV
Rated power frequency withstand voltage	:28 KV
Insulation	:Air
Rated short time current	:26.2 KA.
Rated short time	:3s
Rated peak withstand current	:50 KA.

Operating mechanism: Circuit breaker with spring assisted anti reflex mechanism.

Rated current (Bus) : **630A**
 Rated current (breaker) : **630 A**
 Circuit Breaker interrupter : **VCB**
 Rated frequency : **50 Hz**
 Rated operating sequence : **O-0.3s-CO-3min- CO**

Number of mechanical/Remote operations for earthing & Ring switches & Number of mechanical/remote operations for circuit breakers } **As per IEC 60298**

III.PRINCIPAL FEATURES

Sl. No.	DESCRIPTION	DT breaker
1	Circuit label	Yes
2	Mimic diagram	Yes
3	Supply voltage indication	Yes
4	Current Transformer resin cast bar primary with ratio and class of accuracy and VA burden as specified by TANGEDCO Ammeter with selector switch Space for mounting EM TVM complete with wiring	Yes
5	Numeric based IDMT Relay for O/C + E/F	Yes
6	Master trip relay	Yes
7	Interlock to defeat the operation of the line side earthing when the line side isolator is ON.	Yes
8	Interlock to defeat the operation of the earthing when the breaker is in service position and is ON.	Yes
9	Local /Remote Switch	Yes
10	Breaker ON/OFF indication	Yes
11	Spring Charge indication / Spring assisted mechanism.	Yes
12	Fault Tripping indication	Yes
13	Bus bar end caps	Yes
14	Power pack 110V DC operated from PT input	Yes
15	Whether the spring assisted mechanism with operating handle for ON/OFF.	Yes
16	Whether the earth positions with arrangement for padlocking in each position and independent manual operation with mechanically operated indicator are provided	Yes
17	Resin cast draw out type PT of ratio 11 Kv/root 3/ 110/root3 100 Va class-0.5 or 33 KV/root3/110V/root 3 Voltmeter with selector switch	Yes
18	SPD	Yes

IV. 11 KV Load break switch(Isolators)

Type : Air load breaking and fault making.
 Rated current : 630A
 Fault making capacity(KA peak min.) : 50 KA

II. Earthing switch for 11 KV Line side Isolation and DT

Rated short time current :26.2 KA.

Rated short time :3s

Rated peak withstand current :50 KA

Interlocking facility: 1) Between 11 KV Line side isolator 'ON' & Earthing.

2) Between 11 KV DT side breaker on close condition & Earthing.

Manually operated 630A load break switch and Earthing switch 2 Nos

Live cable indications through LEDs connected to capacitor voltage dividers on the terminal bushings

Mechanical on/off/earth indication

Cable testing facility without opening the cable compartment and without opening the cable terminations.

Cable terminal busing protector of heat shrink type

SPECIFICATION OF SAFETY EQUIPMENTS:

The following safety equipment shall be supplied and installed by the contractor in the substation as per the IER without any extra cost.

FIRST AID CHART:

The first aid charts equipped fully with such contents as stipulated by the CEA conspicuously marked shall be supplied and installed in the switch gear room at 11KV RMG unit at E-substation.

INSTRUCTION FOR RESTORATION OF PERSONS SUFFERING FROM ELECTRIC SHOCK:

Instruction in English and Tamil for providing artificial respiration as per CEA regulations shall be supplied and affixed in a frame board at convenient location in 11KV RMG unit at E-substation. Safety posters for vigilance against electrical accidents as per CEA regulation shall also be provided by the contractor.

RUBBER MAT:

Suitable size of tested flexible rubber mat conforming to latest or IS 15652 of 2006 shall be provided in front of the RMG UNIT by the contractor by own cost.

CAUTION BOARD:

Required number of Danger board / sticker of H.T. Voltage in three languages English / Tamil / Hindi are to be provided on the panel.

LETTER PAINTING:

All incomer cables / all outgoing cables / P.T. & C.T. VCBs details shall be painted / sticker at the front and rear sides of the RMG unit specifying the full details and furnishing the amperage, voltage, size of the cable in the red letters on white back ground. Should be written in RMG unit by the contractor by own cost.

SECTION – IV
TECHNICAL BID

Tenderers should fill their technical offer by providing all information as follows (If not applicable- Please mention as 'N/A') :

1. Name of the Firm
2. Nature of the Firm
(State whether Limited Company, partnership Firm, Co-op. Society or Sole Proprietor, Photocopies of documents Confirming constitution of the firm to be enclosed)
3. Year of Establishment
4. Registration Number
5. Registered Postal Address
6. Telephone No(s).
7. E-mail ID
8. Address of Branches, if any
9. Name of Directors/Partners/Proprietor (as the case may be) with address & Telephone No.(s).
10. PAN No.
11. Indian Income Tax Return Acknowledgement for the previous year (Attach Photocopy)
12. GST Registration No.
13. Name of Bankers & Branch with full address
14. Type of Account & A/C No.
15. Were you associated with BCGVL in any other contract in the past?
16. Are you currently having any contract with BCGVL?
17. Are you on the approved list of other Pharma / Vaccine companies / Public Sector Undertakings / Govt. Dept. etc. If so, furnish copies of Certificates certifying your performance
18. Confirmed that Bank Guarantee will be provided for the Security deposit / performance security.
19. Certified that the firm has not been debarred / blacklisted by Department of Commerce or Ministry / Department concerned or any other Government organization.

Note: The Bidder to fill up the above and enclose supporting documents along with Technical Bid.

Signature of the Bidder with seal

PART – II

PRICE BID



PRICE BID FORMAT

Tender No. D-21029/02/2019-20 (Stores) dated .10.2020

SUPPLY & INSTALLATION OF 11 KVA 630 AMPS. RMG UNIT AT BCGVL, GUINDY, CHENNAI

Sl. No.	Description	Amount
1.	Dismantle the existing Electrical HT Double Pole Structure (old) and handed over to TANGEDCO	
2.	Preparation of RMG Yard	
3.	Supply of RMG unit 11KV, 630 Amps. (a) Supply (b) Installation	
4.	Provision of maintenance free earthing system as per specification of schedule - 'A' (a) Supply (b) Installation	
5.	Testing and Commissioning of RMG unit	
	Sub - Total	
	GST @ %	
	TOTAL	

NOTE:

The selection of the lowest bidder will be on the basis of the total charges exclusive of GST. No comparison will be made on individual item/activity basis.

Rates shall be quoted indicating the breakup of Cost & GST in Indian Rupees only.

Bidders are suggested to visit BCGVL before submitting their quotations during working hours, i.e. between 10.00 am and 03.00 pm.

Signature of Tenderer with seal

Place:

Date:

db

CHECK LIST
(to be submitted alongwith Technical Bid)

Sl. No.	Description	Indicate Yes / No
1.	Tender submitted in Two Bid Technical Bid cover shall be superscribed with TECHNICAL BID & Price Bid cover shall be superscribed with PRICE BID and put in a single large cover superscribed with Tender No. & Date	
2.	EMD submitted alongwith Technical Bid	
3.	Copy of Registration No. / PAN No. / GST No. enclosed	
4.	Proof for Annual Turnover (ITR Acknowledgement)	
5.	Documents in support of 03 years Experience enclosed	
6.	Tender Validity for 120 days given.	
7.	Sealed & Signed copy of complete Tender Document alongwith Technical Bid as a token of acceptance of all Terms & Conditions enclosed.	
8.	All documents enclosed with Technical Bid should be clearly numbered and indexed	

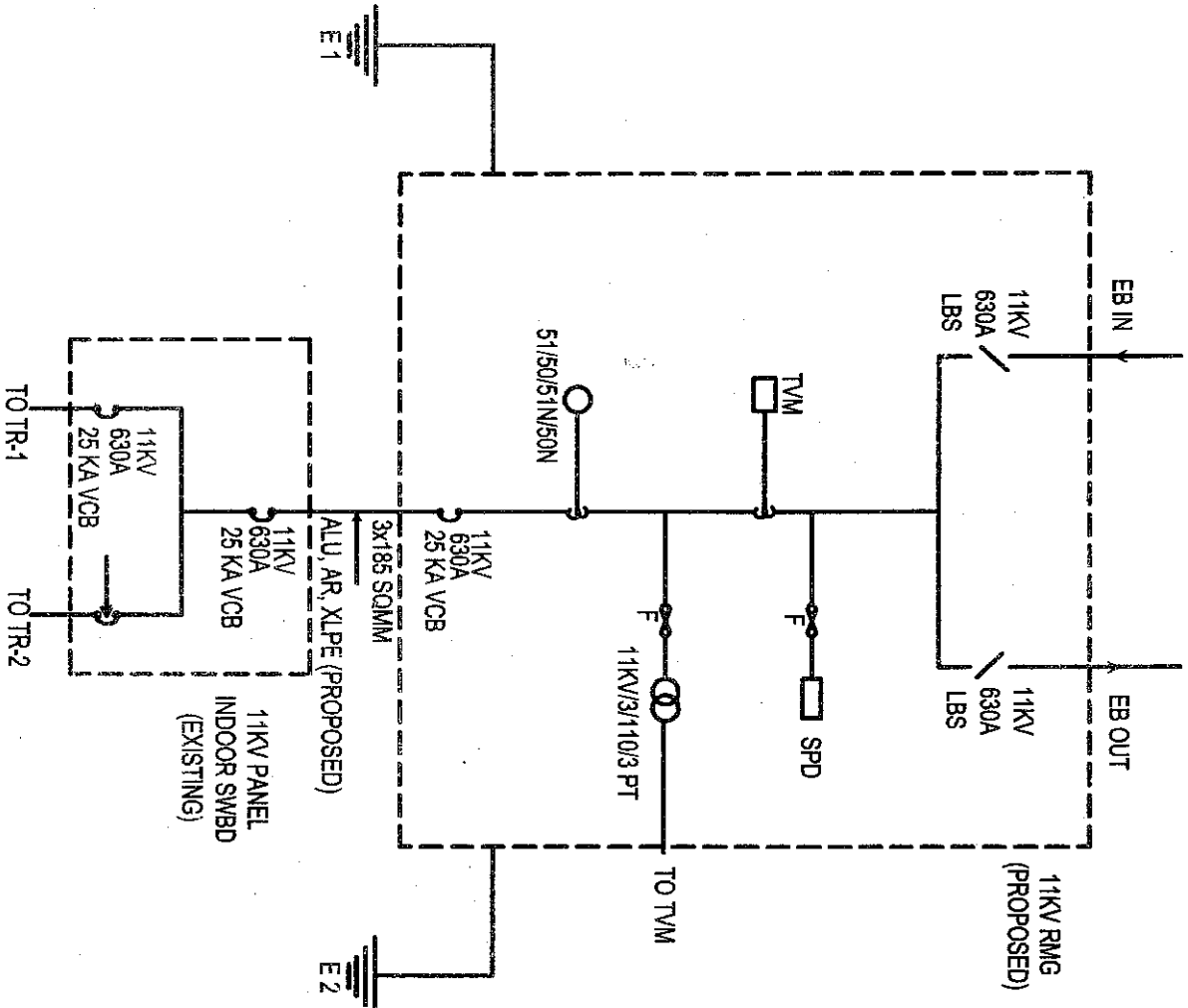
Note:

1. The above check list must be submitted along with Technical Bid.
2. No price component should be mentioned in above checklist, otherwise tender will be rejected.

Signature & Seal of Tenderer.

SLD FOR CONVERSION OF 11KV/2 POLE EB AND DP STRUCTURE BCG LAB, TO 11KV OUTDOOR RMG AT BCG VACCINE LAB, GUNINDY - 32.

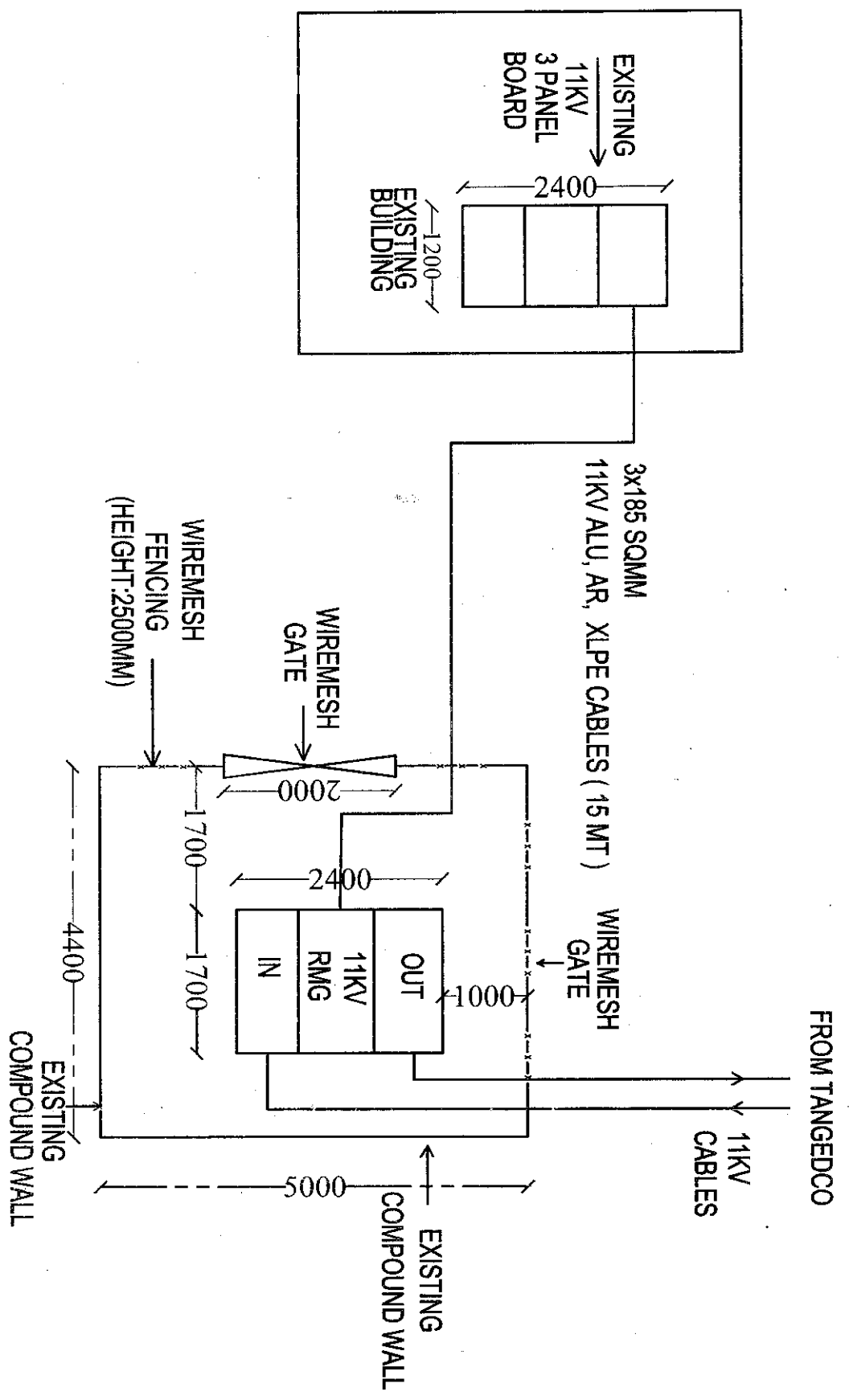
ANNEXURE - I



b

PROPOSED RMG YARD AT BCG VACCINE LAB, GUNDY - 32.

ANNEXURE - II



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