

**GOVERNMENT OF PUDUCHERRY
ELECTRICITY DEPARTMENT
KARAIKAL**

**Telephone No; 222694
261246**

Office of the Executive Engineer-V
Electricity Department
Karaikal

Tender No;47/EDK/EE-V/F.8/2011-2012

Sold:

To,

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Serial No:

Cash Receipt No:

Date:

Karaikal

Date:

Executive Engineer -V
Electricity Department
Karaikal

**GOVERNMENT OF PUDUCHERRY
ELECTRICITY DEPARTMENT**

Enquiry No:47 /EDK/EEV/F. 8 /2011-12

**OFFICE OF THE EXECUTIVE ENGINEER-V
ELECTRICITY DEPARTMENT
KARAIKAL**

Price: Rs. 500/- (Plus 4 % VAT)

1.0 Tender form for supply, erection, testing and commissioning of 4 nos. of 11KV Vacuum circuit breaker at 110/11 KV Surakudy S.S

1.1 Sealed Tender in the prescribed form are here by invited on behalf of the President of India by The Superintending Engineer-II, Electricity Department, Puducherry from all the intending Tenderers for "Supply, erection, testing and commissioning of 4 nos. of 11 KV Vacuum circuit breaker " as per the specification enclosed.

1.2 The site for the work is available at the 110/11KV Surakudy sub-station, Karaikal

1.3 **Tender opening:** Tender should be placed in sealed cover with the name of the work written on the envelope with enquiry number and due date so as to reach this office on or before 09/08/2011 at 3.00 P.M. The same will be opened on the same working day at 4.00 P.M. If the opening date happens to be a holiday, the tenders will be opened on the next working day. The Tender received after the due date and time will immediately be rejected. The Tenderer or their authorised representative/agent may/choose to be present at the time of opening of Tender. An authorisation letter to this effect shall be produced at the time of opening for participation. The Tender receiving officer will on opening of tenders, prepare a statement of attested and unattested correction there in and hand it over to the tender and initial all such corrections there in the presence of the tenderers. If any of the Tenderer or their agents find it in convenient to be present at the time, then in such a case, the tender receiving officer will, on opening, attest the tender of the absentee tender and make out statement of the attested and unattested corrections therein and communicate them to him. The absentee Tenderer shall than accept the statement of correction without any question whatsoever.

The Superintending Engineer – II, Electricity Department, Puducherry reserves the right to reject any or all tenders, award any portion of the order to any one more tender irrespective of the rates being equal or not, and at his discretions increase or decrease the quantity while ordering and during the period of contract after ordering on any of orders or all orders.

1.4 The time allowed for carrying out the work will be 60 days from the date of receipt of the work order.

1.5 The contractor should quote in figures as well as in words the rate and amount tendered by them. The amount for each item should be worked out and the requisite totals given.

1.6 Tender should be addressed to **Executive Engineer-V, Electricity Department, Karaikal** and should be sent in sealed cover, with the name and address of the firm and seal if any .The tender should be as per the enclosed prescribed tender form, otherwise the tender will be rejected.

1.7 If the tender is made by the individual, it shall be signed with his/her full name and his/her postal address shall be given.

1.8 If it is made by a firm, it shall be signed with the co-partnership name, by a member of the firm, who shall sign his/her own name and with the address of member of the firm.

1.9 Earnest Money Deposit: The Tenderer must pay as Earnest Money Deposit a sum equivalent to 2.5% of the estimate cost either in cash or by a Demand Draft on any Scheduled Bank or State Bank of India drawn in favour of the Junior Accounts Officer/Revenue/, Electricity Department, Karaikal payable at the State Bank of India, Karaikal. The cash receipt of the deposit thus made and issued by the Office of Executive Engineer, Karaikal or the demand draft should be attached to the tender. Cash, cheque or Bank Guarantee should not be sent and deposit made by cheque will on no account be accepted. Tenders without Earnest Money Deposit or Earnest Money Deposit of less than 2.5% will be rejected in the first instance.

The Earnest Money Deposit will be refunded to the unsuccessful tenders immediately after the tender has been finalized and on receipt of application from them along with the advance stamped receipt for the amount.

1.10. Validity of the tender: Tenders should be valid for acceptance for a period of at least 120(one hundred and twenty) days from the date of opening.

1.11 Security deposit: When a tender is to be accepted, the Tenderer, whose tender is under consideration, on being given written intimation to him by the Superintending Engineer – II, Electricity Department, Puducherry/Executive Engineer-V, Electricity Department, Karaikal of acceptance of that tender shall make additional security in cash at this office or by demand draft in favour of the Junior Accounts Officer / Revenue Electricity department, Karaikal and payable at Karaikal to make up the security deposit of 5% (Five Percent) of the approximate cost of the work order including supply of materials under consideration of order. Failure to make up the additional security deposit as defined above may entail for fort failure of the Earnest Money.

1.12 The security of 5% together with the EMD of 2.5% shall be retained as security deposit for the due fulfillment of the contract. The security deposit and Earnest Money Deposit made by the firm will not bear any interest.

1.13 After the deposit of 5% of the work order value, an order will be issued to the successful bidder, which should be duly acknowledged. Failure to acknowledge the receipt of order may entitle for fort

failure of the total security deposit and cancellation of the work order with suitable penalty as may be deemed fit by the Superintending Engineer - II, Electricity department, Puducherry.

1.14 On completion of the work to the entire satisfaction of the department by the successful bidder the security deposit and EMD paid by the bidder shall be returned to him within a reasonable time after deducting the amount, if any due to the department.

1.15 The acceptance of a tender will rest with the Superintending Engineer - II, Electricity department, Puducherry who does not bind himself to lowest tender, and reserves to himself the authority to reject any or all of the tenders received without the assignment of reason. All tenders in which any of the prescribed conditions are not fulfilled or are incomplete in any respect are liable to be rejected.

1.16 Canvassing in connection with tender is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.

1.17 All rates shall be quoted on the proper forms of the tender alone.

1.18 On acceptance of the tender the name of the accredited representative(s) of the contractor who would be responsible for taking instruction from the Engineer-in-charge shall be communicated to the Engineer-in-charge.

1.19 Special care should be taken to write the rates in figures as in words of the amount in figure only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the "Rs" should be written before the figure of rupee and word "p" after the decimal figures e.g. Rs.2.15 p. and in case of the word Rupees should precede and the word (Paise) should also be written at the end. Unless the rate is in whole rupees and followed by the word "only" it should invariably be up to two decimal places. While quoting the rate in schedule of quantities, the word "only" should be written closely following the amount and it should not be written in the next line.

1.20 The President of the India does not bind himself to accept the lowest or any tender and reserves to himself the right of accepting to whole or any part of the tender and the Tenderer shall be bound to perform the same at the rate quoted.

1.21 VAT or any other tax in force on material in respect of this contracted shall be payable by the contractor and Government will not entertain any claim whatsoever in this respect.

1.22 The contractor must produce income tax clearance certificate from the appropriate income tax authorities in the form prescribed therefore. In the case of proprietary or partnership firm, it will be necessary to produce the certificate aforesaid for proprietary or proprietors and for each of the partners as the case may be. All tenders received without certificate will be rejected.

1.23 The tender for works shall remain open for acceptance for a period of ninety days from the date of opening of tenders. If any tender withdraws his tender before the side period or makes any

modification, in the terms and conditions of the tender which are not acceptable to the Department, then the Government shall without prejudice to any other right of remedy, be at liberty to forfeit 10% of the said earnest money absolutely.

1.24 The contractor shall submit list of works, which are in hand (progress) in the following form

Name of the work	Name and particulars of division where work is being executed	Amount of work	Position of work in progress	Remarks
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1.25 Rates quoted by the contractors in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However if a discrepancy is found the rates, which correspond with, the amount worked out by the contractor shall be taken as correct.

1.26 If the amount of an item is not worked out by the contractor or it does correspond with the rate written is either in figures or in words then the rate quoted by the contractor in words should be taken as correct.

1.27 Where the rate quoted by the contractor in figures and in words tally but the amount is not worked out correctly, the rate quoted by the contractor will be taken as correct and not the amount.

SECTION-1

GENERAL TERMS AND CONDITIONS:-

1. Scope:-This section covers the general terms and condition of this contract, for supply, erection, testing and commissioning of

2. Visit of site by contractor:-The tenderer is advised to visit the site to acquaint him with the site condition, approaches, availability of raw materials dumping facilities for his labour force, geological and weather conditions and all other relevant information required for tendering before submitting his tender.

3. Tender clarification:-The tender shall note that if any clarification regarding specifications, conditions of contract, and schedule of quantities or scope of work is required. He should contact the office of the Executive Engineer-V, Electricity Department, Karaikal. No claim on account if any ambiguity in respect will be entertained.

4. Comparisons of the Bidding:- The tender shall offer their bidding in the prescribed bidding schedule-3 only attached with this tender for all the activities mentioned therein.

5. Completeness of the contract:-Any fittings or accessories which may not have been specifically mentioned in the specification but which are necessary in the equipment of similar plant or for efficient working of plant shall be deemed to be included in the contract and shall be provided by the contractor with out extra charges. All plant and apparatus shall be completed in all details whether such details are mentioned in the specifications or not.

6. Bidding:-

a. The tender must quote the lump sum bidding firm rates for all the activities described in bidding schedule without fail. The variation in the bidding rates will not be allowed on any ground such as mistake, misunderstanding etc. after the tender has been submitted.

b. **The rates for each activity must include the following:-**

- (1) *Cost of materials/equipment.*
- (2) *All charges for containers and packing.*
- (3) *All charges necessary to effect free delivery of the materials/equipment and other T&P Items at the work site specified in the tender.*
- (4) *All charges such as freight, insurance, customs, excise, clearing charges, other duties such as octroi bill etc.*
- (5) *VAT or any other tax in force on materials/equipment/T&P covered in the contract.*
- (6) *Erection, testing and commissioning charges in respect of all the items required to complete the entire work under each activity and Service Tax if any.*
- (7) *All civil works for erection of the Breakers*

7. Standards:-

- a. Unless otherwise specified, all the materials/equipment and the work shall comply in all respects with the requirements of the specifications under section-II & III are attached with this tender document.
- b. Where necessary the successful tender will have to submit the design/drawings/test reports in of Electrical works to the Engineer in charge of the Department for approval before taking up the works for execution.

8. Coordination: - In the event of a tenderer offering items manufactured by different manufactures, it will be his responsibility to fully co-ordinate the activities of each manufacturer in such a way that the complete equipment contracted is supplied in accordance with the contract. No extra charges shall be payable for these services.

9. Financial Resources and Experience: - The tenderer shall submit a statement of facts in details as to his previous experience in performing similar or comparable work and the business and technical organization financial resources and manufacturing facilities available. The tenderer shall also furnish the list of important consumers for which material were supplied and /or erected in India or else where and also testing facilities available at contractors work.

10. Deviations:- Any deviations from the specifications, if found necessary by the Tenderer, shall be clearly set forth in the schedule-IV giving valid basis for such deviations, The advantages claimed, if any due to such deviation shall be clearly indicated.

11. Insurance: - This is a work contract. The contractor shall take an open policy of the erection, insurance to cover the risks by way of damages to property or person in the execution of the contract including third party liability.

The contractor shall fully indemnify the department against loss to material issued to him by the department for this work by taking an indemnity bond in the form acceptance to Department. The engineer in charge shall not be responsible for any damage or compensation payable by law in consequence of any accident to work man or others in the employment of the contractor.

12. Guarantee: - The contractor shall warrant that the work is carried out in accordance with the specification. The equipment, structures etc. supplied will be free from defects in material and workmanship. The contractor shall furnish performance guarantee for a period of twenty-four months from the date of completion and acceptance of entire work. The whole installation or any part there of found defective during the guarantee period shall be replaced/repared by contractor at free of charge as decided by the department.

13. Completion period:- The time allowed for completion for all the works covered under this contract shall be sixty days after the date of receipt of work order to commence this work. The period includes monsoon.

14. Payment: - 90% Payment shall be made after completion of the work in all respect and on receipt of invoice in valid triplicate and balance 10% payment shall be made after expiry of warranty period or on production of bank guarantee for the amount equaling to the balance payment.

SECTION – II

SCOPE OF WORK AND TECHNICAL SPECIFICATION

1. 11KV Circuit breaker offered would be of vacuum type only. Porcelain – clad breakers shall be accepted. The circuit Breakers offered shall be 3-pole gang operated VCB having 25 KA for 1 Seconds short time rating. The current rating of feeder breaker shall be as given above. For similar rated circuit breakers, it shall be possible to interchange the CBs if required in future.
 - 1.1 The CB should be suitable for fast auto re-closing duty. The CBs should be suitable for capacitor duty for 300 A capacitive current. Free type motor wound closing spring charging shall only be acceptable. An anti pumping relay shall be provided for each breaker, even if it has built- in mechanical anti pumping features.
 - 1.2 Complete Circuit Breaker with all necessary items shall be supplied, including but not limited to the following.
 - 1.2.1 Breaker assembles with support structures for CB as well as for pole control cabinet, and foundation bolts for main structure as well as pole control cabinet (except concrete foundation), terminals and operating mechanism.
 - 1.2.2 All fittings controls, necessary supports and operating systems.
 - 1.2.3 One control cabinet for each breaker with all the required electrical devices mounted there in.
 - 1.2.4 All cables ferrules, lugs, tags, etc. required for cabling from equipment control cabinet/operating mechanism to the central control room.
 - 1.2.5 All necessary parts to form a complete and operable circuit breaker installation such as main equipment, terminals, control parts, connectors and other devices whether specifically called for here in or not are deemed to be included in the scope of the supplier.
 - 1.2.6 The support structure of circuit breaker as well as that of control cabinet except all other parts shall be painted as per shade 697 of IS – 5.
 - 1.3 The total break time as specified under clause 1.9.7 of this chapter shall not be exceeded under any of the short circuit duties as per IS/IEC.
 - 1.3.1 The tenderer may please note that total break time of the break shall not be exceeded under any duty conditions specified such as with the combined variation of the trip coil voltage, (70 – 110 %)

1.5 OPERATING MECHANISM AND CONTROL:

- 1.5.1 Operating mechanism for the breaker shall be housed in suitable metallic enclosure. The enclosures shall be dust, moisture and vermin proof. Control cubicle for local operation of the breaker shall be mounted at a convenient height to enable its operation from ground level. Circuit breaker shall be operated by a spring charged mechanism.
- 1.5.2 The operating mechanism should be strong, rigid, not subject to rebound and shall be readily accessible for maintenance for a man standing on ground. The electrical ON/OFF push buttons/switch shall be accessible from the ground.
- 1.5.3 The mechanism shall be such that the failures of any auxiliary spring will not prevent tripping and will not cause trip or closing operation of the power operating devices.

- 1.5.4 A mechanical indicator shall be provided to show open and close position of the breaker. It shall be located in a position where it will be visible to a person standing on the ground level with the mechanism housing closed. An operation counter shall also be provided in the central control cabinet.
- 1.5.5 Working parts of the mechanism shall be corrosion resisting material, bearings which require grease shall be equipped with pressure type grease fittings. Bearing pin, bolts, nuts and other parts shall be adequately pinned or locked to prevent loosening or changing adjustment with repeated operation of the breaker.
- 1.5.6 The bidder shall furnish detailed operation and maintenance manual (4copies) of the mechanism along with the operation manual (4 copies) for the circuit breaker.
- 1.5.7 The close and trip circuits shall be designed to permit use of momentary contact switches and push buttons.
- 1.5.8 Each breaker pole shall be provided with two(2) independent tripping circuits each connected to a different set of protective relays.
- 1.5.9 The breaker shall normally be operated by remote electrical control. Electrical tripping shall be performed by shunt trip coils. However, provisions shall be made for local electrical control. For this purpose a local/remote selector switch and close and trip control switch/push buttons shall be provided in the Breaker central control cabinet. Remote located control switch/push buttons and indicating lamps shall be provided by the Department.
- 1.5.10 The trip coil shall be suitable for trip circuit supervision during both open and close position of the breaker. The trip circuit supervision relay would be provided by the bidder.
- 1.5.11. Closing coil and associated circuits shall be operate correctly at all values of voltage between 85% and 110% of the rated voltage. Shut trip coil and associated circuits shall operate correctly under all operating conditions of the circuit breaker upto the rated breaking capacity of the circuit breaker and at all values of supply voltage between 70% and 110% of rated voltage. If additional elements are introduced in the trip coil circuits their successful operation and reliability for similar applications on outdoor circuit breakers shall be clearly brought out in the additional information schedule. In the absence of adequate details the offer is likely to be rejected.
- 1.5.12 The auxiliary switch of the breaker shall be positively driven by the breaker operating rod.

1.6. OPERATING MECHANISM:

- 1.6.1 The circuit breaker shall be provided with motor operated spring charged closing. Spring charging motor shall be suitable for 240v 50Hz single phase AC. Spring release coil for closing shall be suitable for 110 v DC. Provision shall be available for charging the springs manually as well.
- 1.6.2 Tripping of the circuit breakers shall be through "shunt trip" coils rated for 110 v DC operation. It shall be possible to trip the breaker manually (locally) in case of necessity.
- 1.6.3 In each circuit breaker, one potential free contact of the limit switch of spring charging motor shall be provided for remote indication of spring charged. This contact shall be wired up and brought out the terminal block to be available in control panel.
- 1.6.4 Local/Remote Selector switch shall be provided in the breaker control panel. All spare auxiliary contacts of the circuit breakers shall be wired up and brought to the terminal block. Minimum 4 no + 4NC contacts multiplier if any used, shall be connected to the DC supply only.

- 1.6.5 Spring operated mechanism shall be complete with motor – opening spring and closing spring with limit switch for automatic charging and other necessary accessories to make the mechanism a complete operating unit be provided.
- 1.6.6 As long as power is available to the motor, a continuous sequence of the closing and opening operations shall be possible. The motor shall have adequate thermal rating for this duty.
- 1.6.7 After failure of power supply to the motor one close open operation shall be possible with the energy contained in the operating mechanism.
- 1.6.8 Breaker operation shall be independent of the motor which shall be used solely for compressing the closing spring. The motor rating shall be such that it requires not more than 30 seconds for full charging of the closing spring.
- 1.6.9 When closing springs are discharged after closing a breaker, closing springs shall be automatically charged for the next operation an indication of this shall be provided in the local and remote control cabinet.
- 1.6.10 Provisions shall be made to prevent a closing operation of the breaker when the spring is in the partial charged condition. Mechanical interlocks shall be provided in the operating mechanism to prevent discharging of closing springs when the breaker is already in the closed position.
- 1.6.11 The spring operating mechanism shall have adequate energy stored in the operating spring to close and latch the circuit breaker against the rated making current and also to provided the required energy for the tripping mechanism in case the tripping energy is derived from the operating mechanism.

1.7. FITTINGS AND ACCESSORIES:

- 1.7.1 Following is a partial list of some of the major fittings and accessories to be furnished by contractor in the circuit breaker control panel. Number and exact location of these parts shall be indicated in the bid.
 - a. T-N-C switch or push button for breaker ON/OFF.
 - b. Mechanical ON/OFF indicator.
 - c. Mechanical spring charged indicator.
 - d. Manual trip push button switch.
 - e. Control cable termination blocks with stud type terminals.
 - f. One power plug along with control switch (230 v, 10A).
 - g. Space heater along with control switch thermostat.
 - h. Illumination lamp with switch.
 - i. Cable glands (double compression type), lugs, ferrules etc .,
 - j. Operation counter.
 - k. Control switches to cut off control power supply.
 - l. Fuses as required.
 - m. The number of terminals provided shall be adequate enough to wire out all contacts and control circuits plus 24 terminals spare for owner/consultant's use.
 - n. Rating and diagram plate in accordance with IEC incorporating year of manufacture.

1.8 TESTS:

The circuit breaker along with its operating mechanism shall conform to the type tests as per IEC/IS.
Routine tests:

Routine tests as per IEC/IS shall be performed on all circuit breakers.

1.9 TECHNICAL PARAMETERS OF 11 KV CIRCUIT BREAKER:

Voltage	➤ 12 KV
Rated Current	➤ 1600 A
Fault level	➤ 500 MVA
Insulation level	➤ 28/75 KV
Breaking Current	➤ 25 KA
Trip Coil	➤ 110 V DC
Short time rating	➤ 25 KV for 3 sec
Making capacity	➤ 63.7 KA
Motor used	➤ Spring charger
Motor	➤ 230 AC

Parameters of 11 KV current transformer outdoor type

	➤
Type	➤ Outdoor oil cooled Current Transformer
System	➤ 11 KV
Frequency	➤ 50Hz
Ratio	➤ 1000/800/600/1-1 A
Class of Accuracy	➤ 1-SP-15
burden	➤ 15 VA
Rated terminal load	➤ As per IS/IEC

Temperature rise over

Design ambient temperature: as per IEC 56 & IEC 694

The circuit breaker should be supplied at Surakudy Sub- Station, Karaikal

SECTION- III

SCHEDULE OF WORK:

Opening Date		Estimate Amount			EMD	
SL. No.	Item of work	Quantity	Unit	Rate in figure	Rate in words	Amount
1	Supply, erection, testing and commissioning of 4 nos. of 11KV Vacuum circuit breaker at 110/11 KV Surakudy S.S	4 Nos.				

Note: 1. The tenderer should clearly specify the make, model capacity of the Vacuum Circuit Breaker for the rate quoted at the space provided at item No.1 and also enclose the pamphlets containing the technical details.

2. All the materials required for the execution of the above work shall be provided by the contractor. The contractor shall arrange to transport the materials to the site at his cost.

3. The tenderer shall offer their biddings as per the bidding schedule only and deviations from the specifications shall be furnished in the separate schedule in section IV.

Signature:

Name:

Status:

SECTION-IV

**SCHEDULE OF DEVIATION FOR SUPPLY AND DELIVERY
(To be filled in and signed by the tenderer)**

We have carefully gone through the technical specification and general conditions of contract and We/I have satisfied ourselves/my self and hereby confirm that our/my offer strictly confirm to the requirements of the technical specification and general conditions of contract except for the divisions Which are given below:-

SL. No.	Description	Stipulations in specification	Deviation offered	Remarks
(1)	(2)	(3)	(4)	(5)

Signature :

Place:

Name :

Date:

Status :