



THE HASHEMITE KINGDOM OF JORDAN  
**ELECTRICITY DISTRIBUTION COMPANY (EDCO)**

**Tender No.( 50/2025 )**

**توريد معيدات غلق (11&33) ك.ف.**

**Tenderer:**

- Name: \_\_\_\_\_
- Address: \_\_\_\_\_
- Telephone/ Cellular: \_\_\_\_\_
- Fax: \_\_\_\_\_
- Website: \_\_\_\_\_
- E-Mail: \_\_\_\_\_
- Contact Person: \_\_\_\_\_

**Director General**

**Electricity Distribution Company (EDCO)**

**P.O. BOX: 830878.**

**Amman - 11183 - Jordan.**

**The Hashemite Kingdom of Jordan.**

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## **INVITATION TO TENDER**

**(50/2025)**

**Dear Sir,**

You are kindly requested to tender for the supply of the below mentioned materials as per the quantities and technical specifications enclosed herewith, by filling in the schedules, signing the form of tender, and forwarding the complete tender documents to the attention of **EDCO-Director General** addressed as seen on the cover page, to be **received not later than 2: 00 pm (local time) ( 25/ 6 /2025).**

All bids must be accompanied with a bid bond of a value not less than **5%** of the highest alternative tender price, otherwise your tender will not be considered. The bid bond shall be enclosed in the same envelope of the tender and must be delivered to the above office **not later than 2:00 pm (local time) ( 25/6 /2025).**

- **The winning bidders/bidder shall bear the announcement costs in the local newspapers, no matter how often the announcement has been posted.**

## **GENERAL CONDITIONS**

- The below are general conditions of contract for the supply and delivery of plant and materials based on United Nations economic commission for Europe publication ref.: me/ 188 Geneva. March, 1953 And/or according to FIDIC 1999 if there is a constructions works.

### **1. Preamble**

1.1. These General Conditions shall apply, save as varied by express agreement accepted in writing by both parties.

### **1.2. Definition of Terms:**

The "**Purchaser**" shall mean "**ELECTRICITY DISTRIBUTION COMPANY.**" Hereinafter called "**EDCO**", and shall include **EDCOS** legal personal representatives and duly appointed engineers. The "**Engineer**" shall mean ". **ELECTRICITY DISTRIBUTION COMPANY** " or persons for the time being or from time to time duly appointed in writing by the purchaser to act as Engineer for the purpose of the contract.

The words "approved" and "approval" where used in these conditions or in the specification shall mean "**approved by**" and "**approval of**" the purchaser respectively. The "Vendor" shall mean the "Contractor" who's tender has been accepted by the purchaser and shall include the **Vendor's.** (Contractor's) legal personal representatives, successors and permitted assigns, "**F.O.B. Price**" shall mean the cost of the equipment delivered free on board the ship or truck or aircraft, all port charges and handling charges (also heavy lift if applicable) included .

The contractor must insure the material against all risks from the time it leaves the works until it is placed F.O.B "**CFR price**" shall mean F.O.B. price plus freight including unloading at the port of destination. All Marine Insurance will be affected by the purchaser.

**NOTE:-**The contractor must provide full details of the material to be shipped in good time for **EDCO** to arrange for Marine Insurance before the material is actually shipped.

## **2. Formation of Contract**

- 2.1. The contract shall be deemed to have been entered into when the purchaser has sent an acceptance in writing before the time set in the tender for acceptance or any such later date extended by the tenderer at the request of the purchaser.
- 2.2. Notwithstanding that the contract and correspondence in connection with the contract shall be in the English language, the contract shall be and be deemed to be a Jordan contract and shall accordingly be governed by and construed according to the laws for the time being in force in the Hashemite Kingdom of Jordan.
- 2.3. **Power to Vary The Work:** no alternations, amendments, omissions, additions, suspensions, or variations of the work, (hereinafter referred to as "variations") under the contract as shown by the contract drawings or the specification shall be made by the contractor except as directed in writing by the purchaser, but the purchaser shall have full power, subject to the provision hereinafter contained, from time to time during the execution of the contract by notice in writing to instruct the contractor to make such variation without prejudice to the contract and the contractor shall carry out such variations, and be bound by the same conditions, as far as applicable, as though they said variations occurred in the specification. If any suggested variations would, in the opinion of the contractor, if carried out, prevent him from fulfilling any of his obligations or guarantees under the contract, he shall notify the purchaser thereof in writing, and the purchaser shall decide forthwith whether or not the same shall be carried out, and if the purchaser confirms his instructions, the contractor's obligations and guarantee shall be modified to such an extent as may be justified. The difference in cost, if any, occasioned by any such variations, shall be added to or deducted from the contract price as the case may require. The amount of such difference, if any, shall be ascertained and determined in accordance with the rates specified in the schedule of prices so far as the same may be applicable, and where the rates are not contained in the said Schedule, or are not applicable they shall be settled

by the purchaser and the contractor jointly.

But the purchaser shall not become liable for the payment of any charge in respect of any such variations, unless the instruction for the performance of the same shall have been given in writing by him. In the event of the purchaser requiring any variation, such reasonable a proper notice shall be given to the contractor as will enable him to make his arrangements accordingly, and in cases where goods or materials are already prepared, or any designs, drawings, or patterns made or work done that requires to be altered a reasonable sum in respect thereof shall be allowed by the purchaser. Provided that no such variations shall, except with consent in writing of the contractor, be such as will involve an increase or decrease of the total price payable under the contract by more than 25 percent thereof. The power given to the purchaser to make any alteration, amendment, omission, addition or variation to, from or in any part of the works shall include power to vary from time to time the date for the completion of the works or any part thereof, **also the purchaser shall have the absolute right to increase the quantities in such manner that the increment does not exceed the amount of 25% of the total price payable under the contract, however; the same prices awarded and any other relevant conditions shall remain the same for this purpose. This right is valid during the delivery period of the ordered material, implementation of works, or (90) days from the date of the letter of award, which is come later.**

- 2.4. **Precedence:** In the event of any discrepancy or contradiction between the provisions of the conditions of contract and of the specification, the conditions of contract shall take precedence. Furthermore in case of discrepancy between unit and total prices then unit price will be considered.
- 2.5. **Prices:** the tender calls for firm prices, unless; otherwise mentioned in the special requirements schedule.

### 3. **Drawings and Descriptive Documents**

- 3.1. The weights, dimensions, capacities, prices, performance rating and other data included in catalogues, prospectuses, circulars, advertisement, illustrated matter and price lists constitute an approximate guide. These data shall not be binding save to the extent that they are by reference

expressly included in the contract.

- 3.2. Any drawings or technical documents intended for use in the construction of the material or of part thereof and submitted to the purchaser prior or subsequent to the formation of the contract remain the exclusive property of the Vendor. They may not, without the Vendor's consent, be utilized by the purchaser or copied, reproduced, transmitted or communicated to a third party. Provided, however, that the said plans and documents shall be the property of the purchaser.
  - a. If it is expressly so agreed, or
  - b. If they are referable to a separate preliminary development contract on which no actual construction was to be performed and in which the property of the Vendor in the said plans and documents was not reserved.
- 3.3. Any drawings or technical documents intended for use in the construction of the material or of part thereof and submitted to the Vendor by the Purchaser prior or subsequent to the formation of the contract remain the exclusive property of the Purchaser. They may not, without his consent be utilized by the Vendor or copied, reproduced, transmitted or communicated to a third party.
- 3.4. The Vendor shall, if required by the purchaser, furnish free of charge to the purchaser at the commencement of the Guarantee Period, as defined in clause 9, information and drawings other than manufacturing drawings of the material in sufficient detail to enable the purchaser to carry out the erection, commissioning, operation and maintenance (including running repairs) of all parts of the material. Such information and drawings shall be the property of the purchaser and the restrictions on their use set out in paragraph 2 hereof shall not apply thereto. Provided that if the Vendor so stipulates, they shall remain confidential.

#### **4. Packing of the materials and shipping marks**

- 4.1. All materials, equipment and goods shall be very well packed, in seaworthy containers and/or wooden cases, etc. These should protect the material during shipping, handling, unloading for a reasonable period of storage at Aqaba and latter storage at EDCO stores.
- 4.2. Packing for indoor materials should be done in such manner as to adequately ensure no ingress of moisture, during the shipping and

storage periods.

- 4.3. Packing of fragile equipment (e.g. including instruments and porcelain) should be done in a way which ensures a reasonable resistance to impact breakage during transport.
- 4.4. Packing shall in general be adequate and in compliance with the best international practice.
- 4.5. A descriptive and fully itemized list shall be prepared for the contents of each packing case. A copy of this list shall be placed in a waterproof envelope under a metal or other suitable plate and securely fastened to the outside of one end of the case. And its position adequately indicated by stenciling on the case. Where appropriate drawing showing the erection marking of the items concerned shall be placed inside the case.
- 4.6. **EDCO** will supply the successful tenderer with a drawing of its shipping mark for utilization.
- 4.7. All packing cases, crates, barrels and drums shall remain the property of the purchaser.

## 5. **Inspection and Tests**

All inspections and tests of the Plant and materials shall be performed to the extent and in the manner as stipulated in the Standards specified. Type test certificates shall be submitted for all important items supplied. They shall contain all major technical particulars which are mentioned in the Technical Data Sheets.

Routine test certificates showing the results of all tests performed on the individual Plant and materials shall be furnished to the Purchaser before dispatch of such equipment. The Purchaser reserves the right to have certain tests performed in the presence of his representative or an independent testing authority. A suitable program for such inspections and tests shall be agreed upon and adequate notice (at least 21 days) shall be given when the Plant and/or materials are ready for inspection or test and every facility shall provide by the Contractor to enable the Purchaser to carry out the necessary inspections and tests. The performance of any



such inspections and tests in the presence of the Purchaser and/or an independent testing authority does not relieve the Contractor from his Contractual obligations.

## **5.1 General Inspection Requirement**

The whole of the material by the contract will be subject to inspection and testing by the engineer during manufacture and on completion. The approval of the engineer or the passing of any such inspection or test will not, however; prejudice the right of the purchaser to reject the material if it fails to comply with the specification when erected or to give complete satisfaction in service. The costs of all tests and inspection shall be borne by the contractor and shall be deemed to be included in the contract price. Before any material is packed or dispatched from the main or sub-contractor's works, all tests called for are to have been successfully carried out in presence of the engineer. Adequate notice shall be given when the material is ready for inspection or test and every facility shall be provided by the contractor and his inspection and his sub-contractors to enable the Engineer to carry out the necessary inspections and tests.

Triplicate copies of all principal test records and test certificates shall be supplied to the Engineer for all tests carried out in accordance with the provisions of the contract.

- 5.1.1** If expressly agreed in the contract, the purchaser shall be entitled to have the quality of the materials used and the parts of the instruments, both during manufacture and when completed, inspected and checked by his authorized representatives.

Such inspection and checking shall be carried out at the place of manufacture during normal working hours after agreement with the Vendor as to date and time.

- 5.1.2** If as a result of such inspection and checking the purchaser shall be of the opinion that any materials or parts are defective or not in accordance with the contract, he shall state in writing his objections and the reasons therefore.

- 5.1.3 Sub-Contractors:** Within two months of acceptance of the tenders

the contractor shall forward to the engineer a list of all sub-orders placed or intended. The contractor shall submit three copies of all sub-orders or selected by the engineer for progress or inspection. One copy of all drawings referred to in the sub-order is to be submitted unless otherwise agreed by the engineer. The drawings and sub-orders submitted to the engineer will cover all major components which are subject to electrical and mechanical pressure or stress when the material is in operation and also auxiliaries and stores which will be dispatched to site direct from the sub-contractor's work. For the purpose of this clause inter-works orders are to be treated as sub-order. Sub-orders are to include a statement advising the sub-contractor that the items being order will be subject to inspection and test by the Engineer. It is important that all copies of such orders are clearly marked with the main contractor's name and the following reference:

**ELECTRICITY DISTRIBUTION COMPANY. CONTRACT No. (50/2025)**

Sub-Contractors are to comply with all the applicable requirements of this specification. Orders issued by the sub-contractor are also to include the main contractor's reference on their sub-order in addition to the above-mentioned heading.

## 5.2 **TESTS:**

All tests should meet the requirements of latest international standard mentioned in the contract or any relevant standard

- 5.2.1 Acceptance tests will be carried out and, unless otherwise agreed, will be made at the Vendor's works and during normal working hours. If the technical requirements of the tests are not specified in the contract, the tests will be carried out in accordance with the general practice obtaining in the appropriate branch of the industry in the country where the material is manufactured.
- 5.2.2 The Vendor shall give to the purchaser sufficient notice of the tests to permit the purchaser's representatives to attend. If the purchaser is not represented at the tests, the tests report shall be communicated by the Vendor to the purchaser and shall be accepted as accurate by the purchaser.
- 5.2.3 If on any test (other than a test site, where test on site are provided for in the contract) the material shall be found to be defective or not in accordance with the contract, the Vendor shall with all speed make good the defect or ensure that the plant complies with the contract. Thereafter, if the purchaser so requires, the test shall be repeated.
- 5.2.4 Unless otherwise agreed, the Vendor shall bear all the expenses of tests carried out in his works.
- 5.2.5 If the contract provides for tests on site, the terms and conditions governing such tests shall be such as may be specially agreed between the parties
- 5.2.6 **Material Tests:** The contractor shall provide test prices as required by the engineer to enable him to determine the quality of the material supplied free of charge and any cost of the tests shall be borne by the contractor. If any test pieces fails to comply with the requirements of the appropriate specifications for the material in question, the engineer may reject the whole of the material represented by that piece, the contractor's designers and

Metallurgists will be consulted before any material is so rejected. In the event of the engineer being furnished with the certified particulars of the tests which have been carried out for the contractor by the suppliers of the material, he may, at his own discretion, dispense with the previously mentioned tests entirely.

**5.2.7 Tests at Manufacture's Works:** Works tests shall include all routine, electrical, mechanical and hydraulic tests in accordance with the relevant IEC standard or other standard may be approved except where departures there from and modifications thereto are embodied in this specification. For material not covered by an IEC or British standard or specifically mentioned in this specification the tests shall be agreed with the Engineer. After satisfactory completion of the witnessed tests at the works, the material shall be submitted for the engineer's approval preparatory to shipping. No item of material is to be dispatched to site until the Engineer has given his approval in writing.

**5.2.8 Test Certificates:** Triplicate sets of all principal test records test certificates and performance curves shall be supplied for all tests carried out in accordance with the provisions of this contract. These test records, certificates and performance curves shall be supplied for all tests, whether or not they have been witnessed by the engineer. The information given in such test certificates and curves shall be sufficient to identify the material or equipment to which the certificates refers and should also bear the contract reference and heading as given in clause 7.2 of this section.

**5.2.9 Rejection of the materials:** If Any item of material or component which fails comply with the requirements of this specification in any respect whatsoever at any stage of manufacture, test, erection or on completion at site may be rejected by the engineer either in whole or in part as he considers necessary, and after adjustment or modification if so directed by the Engineer, the contractor shall submit the item for the item for the further inspection and / or test.

In the event defects of such a nature that the requirements of this specification cannot be fulfilled by adjustment or modification shall be replaced by the contractor, at his own expense, to the entire satisfaction of

the engineer.

### **5.3 Maintenance:**

The contractor must submitted maintenance bond equal to (5%) of the Order amount to guarantee the efficient and good working of the material supplied under the contract for a period of 12 months (Gregorian) from the date of delivery of the material to EDCO SORES in accordance with the General conditions of contract.

## **6. Passing of Risk**

Save as provided in paragraph 7.6, the time at which the risk shall pass shall be fixed in accordance with the International Rules for the Interpretation of Trade Terms (Incoterms) of the International Chamber of Commerce in force at the date of the formation of the contract.

## **7. Delivery:**

- 7.1. Unless otherwise agreed the delivery period shall run from the latest of the following dates:
  - a. The date of the formation of the contract as defined in clause 2.
  - b. The date on which the Vendor receives notice of the issue of a valid import license where such is necessary for the execution of the contract.
  - c. The date of the receipt by the Vendor of such payment in advance of manufacture as stipulated in the contract.
- 7.2. Should delay in delivery be caused by any of the circumstances mentioned in clause 10 or by an act or omission of the purchaser and whether such cause occur before or after the time or extended time for delivery, they shall be granted subject to the provisions of paragraph 5 hereof such extension of the delivery period as is reasonable having regard to all the circumstances of the case.
- 7.3. If a fixed time for delivery is provided for in the contract and the Vendor fails to deliver within such time or any extension thereof granted under paragraph 2 hereof, the purchaser shall be entitled, on giving to the

Vendor within a reasonable time notice in writing, to

**Claim a deduction of the price payable under the contract. Such deduction shall be calculated at the rate of one half of one percent (0.5%) of that part of the price payable under the contract which is properly attributable to such portion of the plant as cannot in consequence of the said failure be put to the use intended for each complete week of delay commencing on the due date of delivery, but shall not exceed a maximum percentage deduction of ten percent.** Such deduction shall be allowed when a payment becomes due on or after delivery. Save as provided in paragraph 5 hereof, such deduction of price shall be to the exclusion of any other remedy of the purchaser in respect of the Vendor's failure to deliver as aforesaid.

- 7.4. If the time for delivery mentioned in the contract is an estimate only, either party may after the expiration of two thirds of such estimated time require the other party in writing to agree a fixed time. Where no time for delivery is mentioned in the contract, this course shall be open to either party after the expiration of six months from the formation of the contract. If in either case the parties fail to agree, either party may have recourse to arbitration, in accordance with the provisions of clause 13, to determine a reasonable time for delivery and the time so determined shall be deemed to be the fixed time for delivery provided for in the contract and paragraph 3 hereof shall apply accordingly.
- 7.5. If any portion of material in respect of which the purchaser has become entitled to the maximum deduction provided for by paragraph 3 hereof, or in respect of which he would have been so entitled had he given the notice referred to therein, remains undelivered, the purchaser may by notice in writing to the Vendor require him to deliver and by such last mentioned notice fix a final time for delivery which shall be reasonable taking into account such delay as has already occurred.
- 7.6. If for any reason whatever the Vendor fails within such time to do everything that he must do to effect delivery, the purchaser shall be entitled by notice in writing to the Vendor, and without requiring the consent of any court, to terminate the contract in respect of such portion

of the material and thereupon to recover from the Vendor any amount not exceeding that part of the price payable under the Contract which is properly attributable to such portion of the material as could not in consequence of the Vendor's failure be put to the use intended.

- 7.7. If the purchaser fails to accept delivery on due date, he shall nevertheless make any payment conditional on delivery as if the material had been delivered. The Vendor shall arrange for the storage of the material at the risk and cost of the purchaser. If required by the purchaser, the Vendor shall insure the material at the cost of the purchaser. Provided that if the delay in accepting delivery is due to one of the circumstances mentioned in clause 10 and the Vendor is in a position to store it in his premises without prejudice to his business, the cost of storing the material shall not be borne by the purchaser.
- 7.8. Unless the failure of the purchaser is due to any of the circumstances mentioned in clause 10, the Vendor may require the purchaser by notice in writing to accept delivery within reasonable time. If the purchaser fails for any reason whatever to do so within such time, the Vendor shall be entitled by notice in writing to the purchaser, and without requiring the consent of any court, to terminate the contract in respect of such portion of the material as is by reason of the failure of the purchaser aforesaid not delivered and thereupon to recover from the purchaser any loss, suffered by reason of such failure up to an amount not exceeding the value of the material, the delivery of which has not been accepted.
- 7.9. If the winner contractor in the tender, refrained for supply the material or execution of works which award for him or failed to execute the contract on the limited time, or failed to replace the rejected material or works in another applying materials on his account, the tenders committee which take its previous design to award the tender for this supplier has the right to Confiscation the bid bond or the performance bond or part of them as commensurate with the material & works value.
- 7.10. If refrained bidder to comply with his offer or did not complete the necessary contract and signing of the purchase order and did not submitted the performance bond within 15 days from the date of the order, the tender s committee has the right to confiscated the bid bond.

### **Force Majeure**

- Notwithstanding the provisions of clauses 7, the supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.
- For purposes of this clause, "Force Majeure" means an event beyond the control the supplier not involving the supplier's fault or negligence. Such events may include, but are not restricted to, acts to the purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes.
- If a Force Majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall all reasonable alternative means for performance not prevented by the Force Majeure event.



## 8. Payment:

### 8.1. **Terms of Payment:**

Subject to any deduction which the purchaser may be authorized to make under the contract or subject to any additions or deductions provided for under clause 2-3 above, The Company (EDCO) prefers to deal with the supplier on an **open account basis**, and the payment to be made as the following:

a. (10%) of the CFR contract value (as shown by the supplier's invoice/contractor invoice) on receipt of the following **legalized shipping** documents by EDCO:

- (Original Invoice + five copies)
- (Certificate of origin + five copies)
- (Bill of lading 3-negotiable + 5 non-negotiable)
- (Test certificate (where applicable) + 6 copies).
- 

**The original shipping documents must arrive to EDCO or to our bank before (5) days at least prior the materials arrival.**

b. (80%) of the invoice value to be paid within 60 days of Receipt of EDCO's certificate of acceptance, Receipt of goods at EDCO stores.

c. (10%) of the contract value within 60 days from expiration of the guarantee period.

If the bidder insists on L/C (letter of credit) as a method of payment, all L/C charges will be on his own expense, in all respects all banking charges are at vendor account, the terms will be as follows:

a. The L/C will be confirmed and irrevocable but has to be **acceptance** L/C, and the supplier has to send the following **legalized shipping** documents:

- (Original Invoice + five copies),
- (Certificate of origin + five copies),
- (Bill of lading 3-negotiable + 5 non-negotiable),
- (Test certificate (where applicable) + 6 copies).
- (Release of shipment (where applicable) – fax copy is accepted).

b. Payment will be released after submitting EDCO's certificate of acceptance to the bank within (30) days after receipt of goods at EDCO's stores.

In the case of a Jordanian Supplier (materials are delivered from local companies), payment will be made through presentation of the invoice as following:

- a. (90%) of the contract value to be paid within 30 days from date of receipt and acceptance of the materials at our EDCO stores.
- b. (10%) of the contract value within 30 days from expiration of the guarantee period (one year from the date of receipt and acceptance of the materials at EDCO stores)

**NOTE:**

- In case the supplier has better terms of payment than those mentioned above the purchaser will discuss such terms.
- Any deviation on the payment methods mentioned above, will negatively affect the evaluation of tenderer's offer.
- In case the payment by acceptance L/C, The performance bond should be valid for a period expiring at least one year after receipt of the last consignment in EDCO stores.
- EDCO has the right to request an additional bank guarantee equal to (5%) five percent to cover the guarantee period.

**Currency of Payment:** The contract price will normally be paid in the currency or currencies in which the price has been stated. The purchaser, however, reserves the right to make payments in the currencies of the countries of origin of goods and services at the exchange rates applicable at the time of payment of the contract price.

**Shipping documents shall comprise the following documents: -**

- 1) **Invoices** – one original, five copies.
- 2) **Shipping specification (packing list)** – six copies.
- 3) **Certificate of origin** – one original, five copies.
- 4) **Bill of lading** – 3 three negotiable, five non-negotiable.
- 5) **Test certificates (where applicable)** – six copies.
- 6) **Release of shipment (where applicable)** – fax copy is accepted.
- 7) **EDCO's Certificate of Acceptance** - fax copy is accepted

- 8.2. Any advance payments made by the Purchaser are payments on account and do not constitute a deposit, the abandonment of which would entitle either party to terminate the Contract.
- 8.3. If delivery has been made before payment of the whole sum payable under the Contract, plant delivered shall, to the extent permitted by the law of the country where the plant is situated after delivery, remain the property of the Vendor until such payment has been effected. If such law does not permit the Vendor to retain the property in the plant, the Vendor shall be entitled to the benefit of such other rights in respect thereof as such law permits him to retain. The Purchaser shall give the Vendor every assistance in taking any measures required to protect the Vendor's right of property or such other rights as aforesaid.
- 8.4. A payment conditional on the fulfillment of an obligation by the Vendor shall not be due until such obligation has been fulfilled, unless the failure of the Vendor is due to an act or omission of the Purchaser.
- 8.5. If the Purchaser delays in making any payment, the Vendor may postpone the fulfillment of his own obligations until such payment is made, unless the failure of the Purchaser is due to an act or omission of the Vendor.
- 8.6. If delay by the Purchaser in making any payment is due to one of the circumstances mentioned in clause 10, the Vendor shall not be entitled to any interest on the sum due.
- 8.7. Save as aforesaid, if the Purchaser delays in making any payment, the Vendor shall on giving to the Purchaser within a reasonable time notice in writing be entitled, and without requiring the consent of any Court, to terminate the Contract and thereupon to recover from the Purchaser the amount of his loss up to the value of the plant, the payment for which has been unreasonably delayed.

## 9. **Guarantee:**

- 9.1. Subject as hereinafter set out; the Vendor undertakes to remedy any defect resulting from faulty design, materials or workmanship.
- 9.2. This liability is limited to defects which appear during the period (Hereinafter called the Guarantee Period) of **fifteen** months from date of dispatch ex-works or twelve months from the date of accepting the Materials at EDCO stores whichever shall be later.

Or in case of turn key projects eighteen months from the date of setting to work.

- 9.3. In fixing this period due account has been taken of the time normally required for transport as contemplated in the contract.
- 9.4. In respect of such parts (whether of the Vendor's own manufacture or not) of the material as are expressly mentioned in the contract, the Guarantee Period shall be such other period (if any) as is specified in respect of each of such parts.
- 9.5. The Guarantee period is based on the continuous use of the plant in services for 24 hours every day.
- 9.6. A fresh Guarantee Period equal to that stated in paragraph 2 hereof shall apply, under the same terms and conditions as those applicable to the original material, to parts supplied in replacement of defective parts or to parts renewed in pursuance of this clause. This provision shall not apply to the remaining parts of material, the Guarantee Period of which shall be extended only by a period equal to the period during which the material is out of action as result of a defect covered by this clause.
- 9.7. In order to be able to avail himself of his rights under this clause the purchaser shall notify the Vendor in writing without delay of any defects that have appeared and shall give him every opportunity of inspecting and remedying them.
- 9.8. On receipt of such notification the Vendor shall remedy the defect forthwith and at his own expense. Save where the nature of the defect is such that it is appropriate to effect repairs on site, the purchaser shall return to the Vendor any part in which a defect covered by this clause has appeared, for repair or replacement by the Vendor, and in such case the delivery to the purchaser of such part properly repaired or a part in replacement thereof shall be deemed to be a fulfillment by the Vendor of his obligations under this paragraph in respect of such defective part.
- 9.9. The Vendor shall bear all the costs and risks of the transport of defective parts or equipment's and their replacements.
- 9.10. Where, in pursuance of paragraph 9 hereof, repairs are required to be

effected on site, the conditions covering the attendance of the Vendor's representatives on site shall be such as may be specially agreed between the parties.

- 9.11. Defective parts replaced according to this clause shall be placed at the disposal of the Vendor.
- 9.12. If the Vendor refuses to fulfill his obligations under this clause or fails to proceed with due diligence after being required so to do, the purchaser may proceed to do the necessary work at the Vendor's risk and expense, provided that he does so in a reasonable manner.
- 9.13. The Vendor's liability does not apply to defects arising out of materials provided, or out of a design stipulated, by the purchaser.
- 9.14. The Vendor's liability shall apply only to defect that appears under the conditions of operation provided for by the contract and under proper use. It does not cover defects due to causes arising after the risk in the material has passed in accordance with clause 6. In particular it does not cover defects arising from the purchaser's faulty maintenance or erection, or from alterations carried out without the Vendor's consent in writing, or from repairs carried out improperly by the purchaser, nor does it cover normal deterioration.
- 9.15. Save as in this clause expresses, the Vendor shall be under no liability in respect of defects after the risk in the material has passed in accordance with clause 6, even if such defects are due to causes existing before the risk so passed. It is expressly agreed that the purchaser shall have no claim in respect of personal injury or of damage to property not the subject matter of the contract or of loss of profit unless it is shown from the circumstances of the case that the Vendor has been guilty of gross misconduct.

**9.16.** All defective and/ or not complying materials shall be

Evacuated from

EDCO stores within a maximum of one month by the vender from the date of notifying him. All costs and expenses of transportation shall be borne by the vendor. Unless otherwise agreed.

Otherwise; EDCO has the right to deal with the defective materials in a proper way.

**9.17.** Gross misconduct "does not comprise any and every lack of proper care or skill, but means an act or omission on the part of the Vendor implying either a failure to pay due regard to serious consequences which a conscientious contractor would normally foresee as likely to ensue, or a deliberate disregard of any consequences of such act or omission.

## **10. Relief**

**10.1.** The following shall be considered as cases of relief if they intervene after the formation of the contract and impede its performance: industrial disputes, and any other circumstances (e.g. fire, mobilization, requisition, embargo, currency restrictions, insurrection, shortage of transport, general shortage of materials and restrictions in the use of power) when such other circumstances are beyond the control of the parties.

**10.2.** The party wishing to claim relief by reason of any of the said circumstances shall notify the other party in writing without delay on the intervention and on the cessation thereof.

**10.3.** The effects of the said circumstances so far as they affect the timely performance of their obligation by the parties, are defined in clauses 7 and 8. Save as provided in paragraph 7.5, 7.7, and 8.7, if by reason of any of the said circumstances, the performance of the contract within a reasonable time becomes impossible, either party shall be entitled to terminate the contract by notice in writing to the other part without requiring the consent of any court.

**10.4.** If the contract is terminated in accordance with paragraph 3 hereof, the division of the expenses incurred in respect of the contract shall be determined by agreement between the parties.

**10.5.** In default of agreement it shall be determined by the arbitrator which

party has been prevented from performing his obligations and that party shall bear the whole of the said expenses.

Where the purchaser is required to bear the whole of the expenses and has before termination of the contract paid to the Vendor more than the amount of the Vendor's expenses, the purchaser shall be entitled to recover the excess. If the arbitrator determines that both parties have been prevented from performing their obligation, he shall apportion the said expenses between the parties in such manner as to him seems fair and reasonable, having regard to all the circumstances of the case.

- 10.6. For the purposes of this clause "expenses" means actual out of pocket expenses reasonably incurred, after both parties shall have mitigated their losses as far as possible. Provided that as respects material delivered to the purchaser the Vendor's expenses shall be deemed to be that part of the price payable under the contract which is properly attributable thereto.

#### **11. Limitation of Damages:**

- 11.1. Where either party is liable in damages to the other these shall not exceed the damage which the party in default could reasonably have foreseen at the time of the formation of the contract.
- 11.2. The party who sets up a breach of the contract shall be under a duty to take all necessary measures to mitigate the loss which has occurred provided that he can do so without unreasonable inconvenience or cost. Should he fail to do so, the party guilty of the breach may claim a reduction in the damages.

#### **12. Rights at Termination:**

Termination of the contract from whatever cause arising shall be without prejudice to the rights of the parties accrued under the contract up to the time of termination.

#### **Arbitration and Law Applicable:**

- 13.1. If Any dispute, question or controversy shall arise between the purchaser and the contractor concerning this contract the matter in dispute shall be referred to an arbitration committee composed of three (3) arbitrators

- 13.2.** One arbitrator shall be nominated by the purchaser and one by the contractor, and the third arbitrator shall be appointed by both parties.
- 13.3.** If either party fails to appoint his arbitrator within one month of the appointment of the arbitrator by the other party, or if the two parties fail to agree on the third arbitrator within two months of the date of the request to refer the dispute to arbitration, such arbitrator shall be appointed by the president of the highest court in Jordan at the request of either or both parties.
- 13.4.** The decision of the arbitrators shall be final and binding on both the purchaser and the contractor. Any such reference shall conform to the statutory enactment or regulation governing arbitration as may be in force in Jordan at the time. The assessment of costs incidental to the reference and award respectively shall be at the discretion of the arbitration committee.



## **TENDERING INSTRUCTIONS**

1. The Tender shall be made in one copy of the accompanying form; however, all blanks and schedules shall be filled up in ink, and signed without alteration to the form of tender. If any such alteration were made, or if these Instructions were not fully complied with, the tender may be rejected. The tenderer; however, is at liberty to add any further details that he may deem desirable and, in the event of his so doing, shall print or type such details and annex the added matter to the tender submitted by him. Such additional details shall not be binding upon the purchaser unless they shall be subsequently incorporated in the contract.
2. One copy of the tender, and its accompanying documents, filled up as directed, together with the drawings, catalogs, and relevant documents called for, must be enclosed in a secure envelope endorsed **(Tender for Contract No. (50/2025))**.
3. All correspondences in connection with this tender and all matters accompanying the tender that are relevant to its examination shall be in English language and expressed in metric units.
4. The tender is to be held open for acceptance or rejection for a validity period of (90) days from the time fixed for opening the tenders.
5. Tenders received prior to the time fixed for opening of tenders will be securely kept, unopened. Tenders received after that time will be rejected. The purchaser bears no responsibility for premature opening of tenders not properly addressed or identified.
6. Tenders may be withdrawn by formal request received in writing from the tenderer prior to the time fixed for opening. If for any reason the tender should be withdrawn after the time fixed for opening and before expiry of the said validity period, the purchaser has the right to retain the full value of the tender bond.
7. The successful tenderer shall abide by the commercial and professional regulations as required by the Ministry of Industry & Trade, Engineering Association and other relevant Institutions in Jordan.

8. Tenderers attention is drawn to the action of customs officers in the discharge of their duties. Whereby air parcels are frequently opened In their own interests and in order to preserve the confidential nature of the tender price, tenderers are urged to pay attention to the:
  - a. To dispatch the completed tender document and any covering letter only by Air Mail which should be endorsed and labeled in the manner laid down in paragraph 10 of the Instructions to Tendering.
  - b. Technical literature and the like may reasonably be sent by Air Parcel or Air Freight but since this would then be separated from the actual Tender, each parcel should contain specific evidence identifying the Tender to which the contents refer.
  - c. The purchaser will not consider late or incompletely delivered tenders or literature supporting tenders due to the action of any customs officer.
9. In the event that the intending signatory does not manufacture one or more of the main sections of equipment and materials, then the tender submitted should give evidence to show that all the obligations imposed by the documents on the intending signatory have been fully understood and accepted, where applicable, by the manufacturer(s) to whom it would be intended to sub-contract one or more of the main sections of the equipment and materials.
10. For overseas transport of the contractor and his Sub-contractors, suppliers and manufactures must give priority to Jordan shipping national lines, and to Arab shipping companies and their subsidiaries for the shipping of goods, materials provided such companies ships call at the port of export. The contractor shall also give priority to the Royal Jordanian Airlines for air freight shipment and transport of personnel.
11. Tenderer must submit country of origin and name of manufacturer for the offered goods.
12. The foreign bidders who participate in this tender must submit their bids through a registered local agent or through their registered office in Jordan.
13. For all manufacturers from inside Jordan it is quite essential that they have JQM for their products and the purchaser will have the right to accept or reject their offer if they did not submitted the JQM certificate with their offer.

14. If samples were not re-claimed by the tenderer within one month from date of order all samples shall remain the property of the purchaser.
15. The purchaser will not be responsible for, nor to pay for, any expenses or losses which may be incurred by a tenderer in the preparation of his tender.
16. If the tenderer has any doubt about the meaning of any portion of the General Conditions, Specifications, Drawings, he shall clarify such doubts before submitting his tender, or in case of any further information can be obtained by an application in writing to the director general.
17. Tenderers are particularly directed that the amount entered on the form of tender shall be a fixed price for performing the contract strictly in accordance with the bound document, and shall be the sum total of all the amounts printed into and entered by the tenderer upon the schedule of prices.
18. Tender price shall include all incidental and contingent expenses.
19. The tender shall be accompanied by a tender bond in the form of a Bank Guarantee valid for at least 90 days from the time fixed for opening the tenders or certified check in favor of and payable to the purchaser for a sum of **5% Of Your Offer** \_\_\_\_\_ as a guarantee of good faith. This bond is to be issued by any approved bank in Jordan. The bond will be returned to the unsuccessful tenderer within (90) days from the time fixed for opening the tenders or at such earlier time as a tender shall have been accepted by the purchaser. In the case of the successful tenderer, the bond will, subject to the conditions of contract, be returned as soon as a formal contract agreement and a performance bond have been entered into.
20. The successful tenderer has to submit a performance bond equal to (10%) ten percent of the total amount of the order within (15) days from date of receipt of the order. Any delay will be subject to delay penalty.

If the successful tenderer fails for any reason to submit the required performance bond within (15) days, the purchaser will confiscate the bid bond and the awarding letter will be cancelled too.
21. The performance bond should be valid for a period; expiring at least one month after receipt of the last consignment in EDCO stores.

22. The tenderer shall state in his tender the name or names of the sureties, insurance company, or bank proposed for guaranteeing the performance of the contract.
23. Prices are highly recommended to be on the basis of C&F EDCO STORES. However CFR Aqaba port or Amman customs are also accepted. All prices offered shall be exempted from custom duties, sales taxes, import license fees and any other tariffs.
24. The tenderer may state the tender price in Jordanian Dinars. If however, a portion of the tenderer's expenditure under the contract is expected to be made in countries other than Jordan he may state a corresponding foreign currency portion of the tender price in the currencies of those other countries.
25. Stamp duty and award fees are payable on Jordanian contracts according to Jordanian laws and, after the placing of a contract, it is the contractor's responsibility to purchase legal stamps to the requisite amount depending on the contract value.
26. If after receipt of tenders, the purchaser finds any difference between prices shown on the form of tender in writing and in numerals, then the price shown in writing shall be considered correct by the purchaser and the tenderer. If any discrepancies are found between the total in the price schedule and the total obtained by adding the products of each quantity and its particular rate then, whether the price shown on the form of tender in numerals or in writing corresponds or not, the total obtained by adding the products of the quantities and their particular rates shall be considered by the purchaser and the tenderer as the tender price.
27. Tender evaluation will be consistent with the terms and conditions set forth in the tender document. In addition to the tender price adjusted to correct arithmetical errors, other relevant factors such as the time of completion of delivery or construction, operating costs where applicable, or the efficiency and compatibility of the equipment, the availability of service and spare parts, and reliability of construction methods proposed will be taken into consideration, to the extent and in the manner specified in the tender documents, in determining the evaluated tender most advantageous to the purchaser. For comparison of all tenders, the currency or currencies of the tender price for each tender will be valued in terms of Jordanian Dinars. The

rates of exchange to be used in such valuation will be the selling rates published by the CENTRAL BANK OF JORDAN and applicable to similar transactions, on the day tenders are opened unless there should be a change in the value of the currencies before the award is made. In the latter case, the exchange rates prevailing at the time of the decision to notify the award to the successful tenderer may be used.

28. The purchaser does not bind himself to accept the lowest offers of any tender, nor to assign any reason for the rejection of any tender, nor to purchase the whole of the equipment and materials specified. The purchaser has the right to purchase part of the tender, even if it is only one item from the schedule of rates and prices.
29. The tenderer shall submit with his tender in order of the relevant clauses, a statement of any departures from specifications, or he can fill in the related schedule attached herewith. Notwithstanding any description, drawings, or literature which may be submitted, all details other than those in the statement of departures shall be assumed to be in accordance with the specification.
30. Although IEC standards for workmanship, equipment and materials, have been selected in this specification as a basis of reference, standards and specifications of other countries and recommendations of other international standard organizations will be acceptable provided that they are substantially equivalent to the designated standards and provided

Further that the tenderer submits for approval detailed specification which he proposes to use.

31. References to brand names or catalog numbers, if any, in this specification have been made only for that equipment for which it has been determined that a degree of standardization is necessary to maintain certain essential features. In certain instances such references have also been made for purpose of convenience to specify the requirements. In either case offers of alternative goods which have similar characteristics and provide performance and quality at least equal to those specified are acceptable.
32. Where compliance with a specific standard specification is called for the standard specification used shall be that in force at the time of tender.
33. The Tenderer should submit a type test certificate from independent testing laboratory similar to the Tender materials as an evidence of his capability to

manufacture such materials also to submit a reference list showing his past supply and he should prove that he supplied similar materials to more than one firm and operated for more than 3 years without problems otherwise his offer will not be considered.

34. A nonrefundable fee of (160) JD will be charged for each set comprising one copy of the Tender Documents.

## **TENDER AGREEMENT SUMMARY**

**Tender No. (50/2025)**

**Dear Sir;**

1. Having examined the conditions of Contract, specification and schedule for the above Works, the undersigned, offer to manufacture, supply, work, test, and deliver the said works described in the specification and schedules and in accordance with the said conditions of contract, for the sum of \_\_\_\_\_ or such other sum as may be ascertained in accordance with the said conditions.
2. We agree that this tender shall be held open for acceptance or rejection for the validity period of **(90) days** from the date fixed for opening tenders and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
3. Unless and until a formal agreement is prepared and executed, this tender, together with your written acceptance thereof, shall constitute a binding contract between us.
4. If our tender is accepted, we will deliver to **ELECTRICITY DISTRIBUTION COMPANY**. Within **(15) days** of being called upon to do so a performance bond by bank or insurance company (to be approved in either case by the purchaser) to be jointly and severally bound with us in a sum equal to **10%** of the value of the contract. The form of the performance bond will be as attached hereto. We propose the following Bank or insurance company as surety (or sureties) in this respect:-.....

5. We undertake if our tender is accepted and on receipt of your acceptance to commence and manufacture, works test, and complete for delivery **ex-works** the whole of the Works offered within (——) weeks calculated from the date of **Order Letter Awarding**, and to deliver on the dock at (—— port) - Jordan the whole of the works offered within a further (—— weeks, or to **EDCO stores** within a further (——) weeks.
6. We undertake to insure the materials against all risks from the time they leave the works until they are placed on board ship. We understand that marine insurance will be affected by **ELECTRICITY DISTRIBUTION COMPANY**. And we will provide details of the materials to be shipped in good time for **ELECTRICITY DISTRIBUTION COMPANY** to arrange for the said marine insurance.
7. A guarantee Period will apply to each section of the works of 15 months from the date of dispatch ex-works or 12 months from the date of setting to work whichever shall be later.
8. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this ——— day of / / 2025.

Signature———— in the capacity of————

Duly authorized to sign Tender for and on behalf of ———

ADDRESS ——— OCCUPATION ———

**ELECTRICITY DISTRIBUTION COMPANY.**

**Form of Bid Bond**

**Tender No. (50/2025)**

**Dear Sir,**

We are pleased to inform you that we guarantee  
M/S \_\_\_\_\_for the amount  
of \_\_\_\_\_in order to allow them to submit an offer  
for the due performance of the undertaking and obligation as specified in their  
Tender for Contract No. \_\_\_\_\_This Guarantee shall remain valid for a  
period of **(90)** days from the time fixed for opening the Tenders by  
**ELECTRICITY DISTRIBUTION COMPANY.**

This Guarantee shall be free from any interest and will be extended or paid in  
cash upon your first request in any or required, without the need for natural  
warning or judicial proceedings and without any rights to delay, oppose, or stop  
payment on our part, or on the part of the Tenderer or any of his  
representatives whomever.

This Guarantee shall be deemed valid until the submittal of a duly executed  
Performance Bond.

***Signed*** \_\_\_\_\_ ***Bank (Surety)***



**ELECTRICITY DISTRIBUTION COMPANY.**

**Form of Performance Bond**

**Tender No. (50/2025)**

**Dear Sirs,**

At the request of \_\_\_\_\_ bank (the Foreign Bank)  
and on behalf of M/S \_\_\_\_\_  
(Contractor's Name and Address), we \_\_\_\_\_ Bank (the  
Local Bank) issue in your favor our irrevocable and unconditional Performance  
Bond No. \_\_\_\_\_ in the amount of \_\_\_\_\_  
\_\_\_\_\_(In \_\_\_\_\_ words), in this connection we  
\_\_\_\_\_ Bank (the Local Bank) hereby consider  
ourselves responsible forth unconditional payment to you or to your authorized  
representatives of the above sum on your first written demand in whole or in  
part notwithstanding any objections on the part of the above named contractor  
and without any need for natural warning or judicial proceedings.

This Bond will expire on \_\_\_\_\_ and shall be renewed automatically for  
a period of \_\_\_\_\_ months and for consecutive similar periods until it is  
returned by you to us.

***Signed \_\_\_\_\_ Bank (Surety)***

**ELECTRICITY DISTRIBUTION COMPANY.**

**Form of Maintenance Bond**

**Tender No. (50/2025)**

**M/S. ELECTRICITY DISTRIBUTION CO. (EDCO)  
Amman – Jordan**

At the request of \_\_\_\_\_ Bank ( the foreign bank ) and on behalf of M/S : \_\_\_\_\_ ( The Contractor name and address ), we \_\_\_\_\_ Bank (the local bank) issue in your favor our irrevocable and unconditional maintenance bond No.(\_\_\_\_\_ ) in the amount of \_\_\_\_\_ (In words) valid until \_\_\_\_\_ covering \_\_\_\_\_ PCT value of the \_\_\_\_\_ (Contract No. Name), in this connection we the \_\_\_\_\_ Bank (local bank ), hereby consider ourselves responsible for the unconditional payment to you or your authorized representatives of the above sum on your first written demand in whole or in part notwithstanding any objections on the part of the above named Contractor and without any need for notarial warning or judicial proceedings.

This bond will expire on \_\_\_\_\_and shall be renewed automatically for a period of (\_\_\_\_\_) months and for consecutive similar periods until it is returned by you to us.

***Signed \_\_\_\_\_ Bank (Surety)***

# **TECHNICAL SPECIFICATION**

## **AUTOMATIC CIRCUIT RECLOSERS (ACR)**

### **GENERAL**

Automatic Circuit Recloser (ACR) shall be a 3-phase Gas Insulated or Dry type breaker suitable for outdoor, self-contained, pole mounted application, and shall be complete with operating mechanism, control module programming facility and all other components necessary for installation and operation. It shall be capable of operating for long periods with little or no maintenance. The ACR shall be complied with the last edition of IEC 62271-111 (IEEE C37.60).

The ACR shall be suitable for the isolation of faults, on the 33 KV and 11KV distribution lines, and shall be suitable to be operated and controlled via Remote Terminal Unit (RTU).

The ACR shall be configured either as a **recloser** or **sectionalizer**.

The modem should be of modular series type fibre, or dual sim card GPRS operated, or dual sim card GPRS operated with V sat.

The control panel and the RTU must be located inside the same cabinet. The RTU can be integrated with the control panel of the ACR.

### **The following protections should be included:**

- Directional over current protection
- Directional earth fault protection.
- Directional sensitive earth fault protection
- Over & under voltage protection
- Over & under frequency protection
- Zone sequence coordination.
- Loss of phase protection.
- Synchro –check
- Broken conductor protection.

### **The following features should be included:**

- Power quality, max demand, watt hour reading
- Fast key configurations
- 2 LAN Ethernet port at least.
- 1 USB port
- Sectionalizer functionality
- I/O cards and User configurable
- 8 Inputs and 8 outputs (NC &NO).
- Capability to switching between protections groups manually by fast key or automatically according to power flow direction change .... etc.
- Events recorder logs (Operation, Fault, Readings...etc)

### **SYSTEM PARAMETERS**

(a) Nominal Voltage	11kV	33kV
(b) System highest voltage	12kV	36kV
(c) System frequency	50 Hz	50 Hz
(d) Number of phases	03	03
(e) Method of earthing	Resistance	Resistance
(f) Max. Symmetrical interrupting current	16 kA	16 kA

### **SERVICE CONDITIONS**

(a) Annual average ambient temperature	30 °C
(b) Maximum ambient temperature	50 °C
(c) Maximum relative humidity	90%
(d) Environmental conditions	Humidity tropical climate with polluted atmosphere
(e) Operational altitude	from -400M under MSL to 1400M above MSL.
(f) Annual average thunderstorm days	16

## DESIGN FEATURES

### TECHNICAL REQUIREMENTS

#### Design Requirements

(a) Rated voltage	kV	33	11
(b) Maximum Voltage	kV	36	12
(c) Rated Short Circuit			
i) Breaking current RMS	kA	16	16
ii) Making Current Peak	kA	40	40
Alternative	KA		
(d) Continuous current	A	630	630
(e) Short time current ( <b>3 second</b> )	kA	16	16
(f) Insulation level			
i) Impulse withstand voltage (1.2/50 $\mu$ s) kV peak	kV	170	75
ii) Power frequency withstand Voltage wet (1min.)	kV	70	28
(g) Minimum Creepage Distance of Bushing	mm	1320	440
(h) Minimum number of sequential tripping operations (Adjustable).	Nos.	4	4

#### Controllers for ACR

- Over Current operation characteristic      Instantaneous, Standard inverse, Very inverse, Extreme inverse.
- Over current setting range      10% - 150% of rated current (Adjust)
- Earth fault operation characteristic      5% to 50 % of rated current (Adjust)
- Dead time setting range      0.5 to 180 sec.
- Reclaim time setting range      1 sec. to 180 sec.
- Battery Low Voltage indication      to be provided
- Current transformer ratio      300-600 / 1(preferable to be regowski)
- The control unit shall be capable to read all the required indications and measurements, and transmit them to the Control Center located in Amman; also it shall be capable to receive all the required commands coming from the Control Center and perform them.  
The control unit shall be compatible with the protocols DNP3 and IEC 61850 and IEC 60870-5-104,101 and Modbus to communicate with the Control Center in EDCO HQ "SCADA ABB SYS600" software (interoperability list for the ABB SYS600 is attached).
- The tenderer shall submit a signal list of all the possible indications, measurements and commands that the AR is capable to read or perform.
- The Control unit must communicate with the Control Center using a GSM modem, the modem is connected via Ethernet to the control unit.

- 11- The Control unit shall be compatible to communicate through all the standard SCADA protocols, including but not limited to (IEC 60870-5-104 & DNP3)
- 12- The control unit shall have 2 Ethernet (both can be used for SCADA and configurations.) as well as one USB port (can be used for configuration).
- 13- The Control unit shall be configured remotely from the Control Center, using a special software installed on the **Communication Server**, where any configurations can be performed onsite to be performed remotely, and this software must be user friendly.
- 14- The Control unit shall have the capability for time synchronization with a NTP server located in the Control Center.
- 15- The Control Unit shall have the SOE recording capabilities with a time stamp for each event, and to transmit these events to the Control Center. In case the loss of communications all the lost events (that were not transmitted) shall be retransmitted again, once the communications are restored. The tenderer is requested to specify the maximum number of events that the memory of the RTU can store.
- 16- All the events shall be accessible locally from the LCD on the control unit.
- 17- The events shall be detected with time resolution of 1 ms or better.
- 18- The analog measurements shall be updated according to a configurable dead band, whenever this band is exceeded the value is updated.

The ACR shall be of three phase type with vacuum interrupter with electrical insulation provided by a solid dielectric or gas insulation material. The ACR shall be capable of making and breaking repeatedly the loads stated above under the specified conditions. The ACR must be operated by a magnetic actuator which produces a fast opening and closing operation of the vacuum interrupters.

The ACR shall have its own self-contained operating mechanism, and self-supporting control unit. The tank of the ACR and the control housing shall be made of corrosion resistance material of water and dust-proof of 2 mm minimum thickness of stainless steel, or 4 mm thickness of Aluminium cabinets having a degree of protection IP54. Suitable means shall be incorporated to eliminate the formation of condensation.

The ACR shall be capable of performing a sequence of four trips prior to lockout even when the line fault is so close to the station that the station voltage is essentially zero at the instant of the trip.

Each ACR shall be equipped with a means of sensing, and operating on, an earth fault current, which may be lower than the minimum phase tripping current. Adjustable current and definite time settings shall be provided and shall be field selectable.

The Current and Voltage transformers shall be provided with the ACR for purpose of fault detection operation and storing event history (sensors are preferable)

(The data sheets and details for V.Ts and C.Ts shall be provided with the tender document)

No auxiliary supply shall be provided and the ACR shall derive the energy to operate from the MV circuit.

### **Coordinate possibility with other grid components**

The ACR will provide over-current protection for both phase and ground faults, and it will incorporate position indicator showing clearly it is closed or opened position from the ground surface. A contact position indication (OFF in green and ON in red), as well as a "locked-out" indicator shall be provided; these indicators shall be clearly visible from ground level.

Operation counters shall be fitted to the ACR closing mechanism.

Voltage free contacts shall be provided for SCADA indications of the ACR when it reaches the lock-out position.

### **INSULATOR**

Bushing/housing insulator shall be of polymer type and terminals shall be of the universal flat pad clamp type to accommodate vertical connection with ACSR Conductor size 50 mm<sup>2</sup> to 200 mm<sup>2</sup>.

The ACR bushing shall have minimum creepage distance not less than 1320 mm for 33KV system and 440 mm for 11KV.

The anti-bird device (caps) shall be supplied with pushing for ACR to prevent electrical outages caused wildlife coming into contact with live parts

### **INSULATION AND INTERRUPTION MEDIA**

The Insulation media may be SF6 Gas Insulated or Solid Dielectric Type (oil insulated type is not accepted). However the Interrupting media shall be Vacuum only (interrupting media with SF6 gas is not accepted). tanks shall be used to enclose all parts of the ACR and shall be of robust construction.

#### **Insulation Media – Solid Dielectric (Dry Type)**

In case of solid dielectric insulation material, this insulation material shall be highly resistance to ozone, ultraviolet radiation and suitable for operation in severe environmental condition areas (powdery/salty/ industrial deposits/present of condensation/rain/frost).

#### **Insulation Media - Sulphur Hexafluoride SF6**

In case of SF6 Gas Insulated ACR; the GIS compartment of the ACR shall be hermetically sealed for life. Tanks shall be based on the design requirements of pressurized enclosures. Gaskets and joint designs shall remain gas tight under all normal service conditions. Features to ensure the

safe release of internal over pressure exceeding the safe design pressure shall be provided. SF6 shall comply with the requirements of BS EN 60376 or equivalent standard. Gas fill valve shall be provided for topping up of the SF6 gas. Provision to prevent explosion during internal arc fault shall be provided.

The ACR shall incorporate electronic or mechanical pressure sensors to monitor the SF6 gas pressure. When the SF6 gas pressure falls below the pre-set value the sensor shall display SF6 pressure low indication on the control panel. The facility to set up for ACR to lock out under low SF6 pressure shall be provided.

### **Interrupters - Vacuum**

Interrupting media shall be Vacuum only. Number of full load interruption, full fault interruption and number of low (half) fault interruption that could be performed by the interrupter during its life span shall be furnished from the manufacturer.

### **MOUNTING**

The ACR shall be suitable for mounting on a concrete poles or lattice steel structure (H shape). The ACR shall be installed vertically or horizontally provided that the supplier have to include in his offer all required steel structures including all required brackets. A drawing of the method of mounting shall be submitted with the Tender. The ACR will be accompanied with a suitable frame for direct mounting on specified poles in the attached drawings. All necessary steelwork including brackets, bolts and accessories for mounting the equipment shall be provided by the Bidder and shall be included in the bid price. Steel frame shall be hot dip galvanized of a minimum thickness of at least 85µm.

The ACR shall be provided with suitable Steel Mounting Frame with Lifting Tackle, Surge Arrester Mounting Bracket on the source and load side, in case external VTs are required.

Provision shall be made for ease of on-site maintenance and removal of the ACR without the use of special tools.

All the metallic parts must be grounded with a suitable material. The ACR must be capable to operate (open/close) electrically (on site and remotely) from an independent control panel, mounted on the same pole and connected to the ACR with a suitable length cable, as well as it will operated mechanically with the help of special isolated disconnecting hot stick. The cable and fixing materials shall be included in the tender.



## OPERATING SEQUENCE

The operating sequence of the ACR shall be as follows with the number of operations to lock-out adjustable.

- (a) Instantaneous trip.
- (b) Delay.
- (c) Close.
- (d) Fast trip.
- (e) Delay.
- (f) Close.
- (g) Delayed trip.
- (h) Delay.
- (i) Close.
- (j) Delayed trip.
- (k) Lock-out in open position.

The period of the delay in steps (b), (e) and (h) shall be adjustable from 0.5s to 5s. The period of delay in step (g) shall be adjustable from 0.5s to 20s.

The ACR should not reach the lock-out condition of step (k), on fault clearance after an adjustable period between 10s and 180s, the operating sequence shall reset.

Reset times shall ideally be separately selectable for the over-current and earth fault functions. The reset time shall be selectable from 0.5 sec to 180 sec.

Dead times shall ideally be separately selectable for the over-current and earth fault functions. The dead time shall be selectable from 0.1 to 180 s for the first and second sequence and from 0.5 to 180 seconds for subsequent re-closer sequences.

After lock-out condition is reached the step (k), the ACR shall be reset manually before further operations can be carried out.

All manual mechanisms shall be designed so that the ACR can be closed by one movement of the operating handle. Operating mechanisms shall be of the trip free type.

Each ACR shall be provided with means to manually trip and lockout the ACR in the event of loss of both internal and external control power; this operation must be independent with the speed of the operator. Manual trip and lockout for the ACR shall be provided by an external, hook-stick operated handle. Any subsequent reclose operations will remain disable until the manual operation handle is returned to the normal position.

Electrical tripping devices shall be of approved design and shall be operated between limits of 50% below and 20% above normal operating voltage.

Electrical closing devices shall operate successfully between the limits of 80% and 120% of the normal operating voltage at the terminals of the device.

## **CONTROL**

The control cubicle shall be connected with the ACR by a multi-core cable and shall be erected on the same pole as the ACR. The control inside the cubicle shall be microprocessor based and shall be equipped with features regarding application flexibility (programming of parameters), supervisory operation and event recording. The user interface shall be through an environmentally sealed push-button panel. The control panel shall be equipped with LCD display, keyboard and indicators of the ACR status. It shall bring the ON/OFF switch (open/close, local/remote operation, ACR on/off etc.) and data port for the communication with a personal computer. The required software shall run under the last version of windows.

The selection of the reset time and the number of trip operations shall be through control unit.

A suitable switch (key) must exist for the (LOCAL/REMOTE) operation. In the LOCAL operation REMOTE operation is excluded.

The control panel must have the mechanism for the functions of the ACR, magnetic actuator, the battery, and the battery charger. The actuator must be operated by:

- Locally, manually by a push-button.
- Remotely by closing contact.

All operating parameters of the ACR i.e.; minimum trip current, time-current trip characteristics, reclosing reset times, and operating sequences, shall be controlled from the control cabinet locally as well as remote end.

Non-volatile memory with enough capacity capable to record at least 150 events including distinction between local and supervisory functions and reporting of system events and display 30 different events with date and time.

The chargeable batteries inside the cabinet of control panel shall provide energy for the operation of all units (control panel, RTU and communication system). The batteries must be capable of providing at least 24 hours of carryover upon loss of AC source power, the batteries shall be capable of providing at least 10 open and close operations. The batteries must be gel type batteries, hermetically sealed, free of maintenance, and extending battery life. The battery shall be remotely monitored and tested. Long life reliable chargeable battery operated from charger CT's.

The control panel must have at least the following data recording capabilities:

- Event recorder to record and display event history information.

- Counter of all fault initiated trip operations.
- Type of faults (i.e. phase fault or ground fault).
- Fault magnitude. voltage, frequency
- Time of the event (Year, Month, Day, Hour, Minute).

The following remote control functions shall be performed at least:

- Trip and lockout/close, ACR in/out, instantaneous operation in/out, earth fault in/out.
- It shall also be remote indication of the following status: Supervisory on/off, ACR status open/close, ACR lockout status, ACR status, instantaneous operation status, earth fault status.

The degree of protection of the enclosure must be IP54. The enclosure must have anticorrosive protection and all the accessories must be dust-proof (using suitable anticorrosive paint to protect must be approved from EDCO's engineer).

### **Communication Modem:**

The supplier shall include a ROBUSTEL - R3000 Lite (the latest version) communication modem to perform the communications tasks between the mini RTU and the Control Center.

The modem must contain the following accessories:

- Wall Mounting Kit.
- Power supply.
- one antenna (3G/4G).
- one magnet antenna (3G/4G) (3meters).
- 3x1 pin pluggable terminal block for power supply.
- Ethernet cable.
- A suitable socket outlet shall be included in the enclosure, to be able to supply the modem with the needed 220VAC.

### **POWER SOURCES**

In all cases the ACR shall be self-contained so that it operates without the provision of auxiliary supplies.

### **LINE AND EARTHING TERMINAL CLAMPS**

Clamp type terminals shall be provided on all ACR. Each clamp terminals shall be of the universal flat pad type to connect with ACSR Conductor size 50 mm<sup>2</sup> to 200 mm<sup>2</sup>. (Other type must be approved by EDCO's engineer).

Earthing terminal suitable to accommodate two Nos. 5 mm dia to 15 mm dia earthing conductors shall be provided for bonding the ACR tank, mounting frame and the surge arrester earth terminal to the local earthing electrodes.

### **TESTING SET**

In case special testing equipments are required for testing of ACR, such testing equipment shall be supplied as specified in the price schedule.

### **GUARANTEE**

Three years comprehensive warranty for the control panel.

The supplier shall guarantee the ACR against all defects arising out of faulty design, faulty workmanship or of defective material for a period of two (2) years from the date of delivery.

### **INFORMATION TO BE SUPPLIED WITH THE OFFER**

The following shall be furnished with the offer.

- (a) Catalogues describing the equipment and indicating the model No. 57
- (b) Literature describing the operational feature and maintenance of the equipment (In English).
- (c) Constructional features, materials used for components and relevant technical literature (In English).
- (d) The following drawings;
  - i) Overall dimensional drawing of the ACR including general arrangement.
  - ii) Electrical clearance requirements of installation
  - iii) Insulator assembly and shed profile
  - iv) Dimensional drawing of mounting arrangement.
  - v) Name plate to scale; incorporating the particulars called for.
- (e) The following Certificates of type tests as per relevant ANSI / IEC standards
  - i) Insulation dielectric test
  - ii) Making and breaking current tests
  - iii) Minimum tripping current tests
  - iv) Partial discharge and RIV tests
  - v) Surge current
  - vi) Temperature rise
  - vii) Time - current tests
  - viii) Mechanical operation test
  - ix) Cable and transformer current interruption tests
  - x) Control unit surge withstand
  - ix) Operating duty tests
  - x) Minimum actuating current tests

h) List of purchasers outside the country of manufacture during last five years giving name of the buyer, No. of units sold and the year of sale .

Test Certificates and performance curves, based on the type tests conforming to relevant standard shall be supplied along with the offer. The type test certificates should clearly identify the equipment concerned, showing the manufacturer's identity, model & type and basic technical parameters .

The test certificates referred shall be issued from a recognized independent testing authority acceptable to the Purchaser. The manufacturer shall certify the test certificate as true copies of the original certificates

**Failure to furnish the above particulars will result in the offer being rejected.**

## **TRAINING AT SITE**

The supplier shall provide at site training; covering installation, operation, coordination, and maintenance for an adequate period, to be agreed by the EDCO and the supplier after supply of the ACR

## **FACTORY ACCEPTANCE TEST (FAT) AND TRAINING**

The selected Bidder shall make necessary arrangements for inspection by two engineers appointed by the Purchaser to carry out in his presence necessary Acceptance Factory Test of the equipment offered. A training course (covering installation, operation and maintenance) shall be provided for EDCO's Engineers during the FAT at the manufacturer facility.

The training shall be conducted in English, and each trainee shall be furnished with copies of manuals as well as spare parts catalogue.

The following Acceptance/Sample tests as per IEC/ANSI shall be carried out on all ACR and witnessed by EDCO's Inspectors.

- a) Reclosing and overcurrent trip calibration
- b) Control, secondary wiring and accessory device check test
- c) Dielectric withstand test; 1 min. dry power-frequency.
- d) Partial discharge test.
- e) Mechanical operation tests
- f) Water leakage test
- g) Temperature rise test
- h) Duty Cycle Tests
- i) Tightness test (For Gas Insulated)



## **SCHEDULES AND GUARANTEES**

<b><u>SCHEDULE NO.</u></b>	<b><u>DESCRIPTION</u></b>
<b>A</b>	<b>Schedule of Requirements</b>
<b>B</b>	<b>Price schedules</b>
<b>C</b>	<b>Guaranteed delivery period schedules</b>
<b>D</b>	<b>Manufacturers, places of manufacture and testing place</b>
<b>E</b>	<b>Technical Particulars and Guarantees Schedules</b>
<b>F</b>	<b>List of type test certificates</b>
<b>G</b>	<b>Reference list</b>
<b>H</b>	<b>Deviation from specifications Schedules if any</b>

**SCHEDULE (A)**

**SCHEDULE OF REQUIREMENTS**

<b>Item No.</b>	<b>Description</b>	<b>Unit Item</b>	<b>Quantity</b>
1.	Auto Recloser 33KV with 16KA 3sec. short circuit to be interfaced with the SCADA as Specified, using Robustel modem as specified.	<b>set</b>	<b>62</b>
2.	Auto Recloser 11KV with 16KA 3sec. short circuit to be interfaced with the SCADA as Specified, using Robustel modem as specified.	<b>set</b>	<b>15</b>



**SCHEDULE (B)**  
**PRICES SCHEDULES**

ITEM NO.	DESCRIPTION	QTY AND UNIT	UNIT PRICE & CURRENCY .....		TOTAL PRICE C &F AQABA JORDAN
			FOB	C &F AQABA	
1.	Auto Recloser 33KV with 16KA 3sec. short circuit to be interfaced with the SCADA as Specified, using Robustel modem as specified.	62 SET			
2.	Auto Recloser 11KV with 16KA 3sec. short circuit to be interfaced with the SCADA as Specified, using Robustel modem as specified.	15 SET			
3	<b>Optional:</b> Factory Acceptance Test with training for two EDCO Engineers for one week at the manufacturer facility as Specified				
<b>TOTAL PRICE (C &amp; F) AQABA (must be appeared in tender form)</b>					

**The Tenderer should submit with his offer complete short circuit tests according to IEC standard from one of STL group laboratories including ICMET laboratories for the ACR as evidence of his capability to manufacture such materials.**

### **IMPORTANT NOTES:**

- 1. EDCO Has The Right To Accept Partial Offers And To Award Part Of The Items Or Quantities Without Any Limit Regardless Clause (2.3) From Section Iii (General Conditions Of Contract).**
- 2. . EDCO Has The Right To Choose Any Option From Above, Or Any Quantity From Both Options**
- 3. EDCO Has The Right To Reject Any Offer Based On Edco Evaluation To The Quality, Reliability And Well-Known Manufacturers.**

### **SCHEDULE (C)**

#### **GUARANTEED DELIVERY PERIODS IN WEEKS**

<b>DESCRIPTION</b>	<b>DELIVERY PERIOD FOB-SPECIFY PORT</b>	<b>DELIVERY PERIOD AQABA PORT JORDAN</b>
Auto Recloser 33KV with 16KA 3sec. short circuit to be interfaced with the SCADA as Specified, using Robustel modem as specified.		
Auto Recloser 11KV with 16KA 3sec. short circuit to be interfaced with the SCADA as Specified, using Robustel modem as specified.		

**Note 1:** All time periods are weeks from date of Contract Placement.

**Note 2:** For purposes of Tender Evaluation, the time from commencement date within which the material is required to be delivered to CFR AQABA Port – JORDAN shall be less than 14 weeks.

**SCHEDULE (D)**

**MANUFACTURERS, PLACES OF MANUFACTURE AND TESTING PLACE**

DESCRIPTION	MANUFACTURER	PLACE OF MANUFACTURE	PLACE OF TESTING
Auto Recloser 33KV with 16KA 3sec. short circuit to be interfaced with the SCADA as Specified, using Robustel modem as specified.			
Auto Recloser 11KV with 16KA 3sec. short circuit to be interfaced with the SCADA as Specified, using Robustel modem as specified.			

**SCHEDULE (E)**  
**technical data Automatic Circuit Reclosers (ACR)**  
**(To be completed by the Tenderer)**

No.	Description		33 KV	11 KV
1	(a) Type of ACR (b) Class Designation (Catalogue ref. No.) (c) Indoor/outdoor			
2	Number of phases			
3	Rated normal current at site	A		
4	Max. continuous current	A		
5	Nominal system voltage	kV		
6	Highest system voltage	kV		
7	Rated frequency	Hz		
8	Method of closing			
9	Method of tripping			
10	Type of Operating mechanism for closing			
11	Normal voltage for operation of closing mechanism	V		
12	Type of Operating mechanism for tripping			
13	Normal voltage for operation of tripping mechanism	V		
14	Change of direction of Power flow is available	yes/no		

No.	Description		33 kV	11 kV
15	(a) Number of sequential tripping operations to lockout.  (b) Electrical Endurance (in/out operations)  (c) Mechanical Endurance(in/out operations) -  (d) Whether a counter is provided for recording electrical & mechanical operations.	yes/no		
16	Rated making capacity	kA peak		
17	Rated breaking capacity: (a) Symmetrical (b) Asymmetrical (c) Rated short time current (d) Rated duration of short circuit (e) X/R ratio	kA kA kA S		
18	Voltage limits within which tripping device will operate	kV		
19	Voltage limits within which closing device will operate	kV		
20	Opening time (until separation of the arcing contacts): (a) Without current. (b) At 100% of rated breaking current. (c) Duty cycle on which maximum arc duration occurs.	ms ms ms		
21	Total opening time	Ms		
22	Make – time	Ms		
23	Auto – reclosing operation: (a) Dead time range. (b) Minimum operating time.	Sec Ms		
24	Number of current interrupting breaks in series per phase			

No.	Description		33 KV	11 KV
25	Method of controlling voltage distribution between breaks			
26	Estimated voltage distribution between breaks (where controlled)	%		
27	Length of each break	mm		
28	Length of stroke of moving	mm		
29	Whether a separate series isolator is incorporated in the breaker			
30	Type of main contacts			
31	Type of arcing contacts			
32	Type of arc control device			
33	Type of device, if any, used to limit rate of rise of re-sticking			
34	Type of Bushing?			
35	Material of Bushing?			
36	(a) Insulation media ( Dry/SF6) (b) Interruption media			
37	Current rating of bushing?			
38	Type of terminal and the applicable conductor size			
39	Is arcing horns provided?			
40	Voltage drop across main contacts at normal current Contact resistance.	V Ohm		

No.	Description		33 KV	11 KV
41	Does magnetic effect of load current increase Contact pressure?			
42	Weight of whole ACR equipment complete with all fittings as in service.	Kg		
43	Dynamic weight of whole ACR equipment complete with all fittings as in service	Kg		
44	Routine pressure test on ACR tanks or containers	KN/m <sup>2</sup>		
45	Pressure type tests on ACR tanks or containers	KN/m <sup>2</sup>		
46	Minimum clearance in air: (a) Between phases (b) Live parts to earth	mm mm		
47	Creepage Distance	mm		
48	Protected distance	mm		
49	Material of (a) Interrupter housing (b) Control unit housing (c) Operating mechanism housing			
50	Number of tanks or containers per three-phase equipment			
51	Material of tank or container			
52	Thickness of Tank			

No.	Description		33 kV	11 kV
53	Thickness of tank or container: (a) Walls. (b) Bottom.	mm mm		
54	Size of tank or container: (a) Diameter or rectangular dimensions. (b) Length.	mm mm		
55	Material of top plate.			
56	Thickness of top plate.	mm		
57	Method of attaching top plate to main tank			
58	Volume of insulating medium Dry / gas.			
59	Operating pressure of SF6 gas.	Bar		
60	Hermetically sealed for life	yes/no		
61	(a) Type (e.g.post, busging, etc.) (b) Number of phases per unit. (c) Number of secondary windings per unit.			
62	Standard rated output per phase: (a) Ratio primary/secondary. (b) Output.	A VA		
63	Standard accuracy classification for protection service.			
64	Frequency ranges over which above accuracy applies.	Hz		



No.	Description		33 KV	11 KV
65	(a) Primary continuous thermal current rating. (b) Rated short – time thermal current rating. (c) Rated short – time dynamic current rating	A A A		
66	Resistance of secondary winding at 75 °C.	Ohms		
67	(a) Impulse withstand voltage 1.2/50 micro second (b) Power frequency withstand voltage wet (1min.)	kV kV		
68	Temperature rise for (a) Contact (b) Terminals	°C °C		
69	Dimensions of control cabinet	mm		
70	Weight of control cabinet	Kg		
71	Protection category (IP) of Control cabinet			
72	Connection between Control cabinet and ACR			
73	Over-current relay (a) Make (b) Type (c) Settings available			
74	Earth fault relay (a) Make (b) Type (c) Settings available			
75	Battery (a) Make (b) Size (c) Life			
76	Battery output voltage	V		

No.	Description		33 KV	11KV
77	Battery output current	A		
78	Battery charger (a) Make (b) type			
79	Battery charger output voltage	V		
80	Battery charger output current	A		
81	Whether it is sealed and maintenance free	yes/no		
82	Service life time	years		
83	Number of in/out operation that could be performed without mains supply	No.		
84	Whether documents including calculations furnished to prove of the above	yes/no		
85	Whether a signal to indicate low battery voltage is provided	yes/no		
86	Battery hold-up time	hrs		
87	Method of obtaining Auxiliary supply for battery charging.			
88	Auxiliary battery Charging power supply voltage	V		
89	CT Ratio			
90	Secondary Amps of the CT	Amp		
91	Secondary voltage of the VT	V		
92	Whether the following accessories are provided: (a) All required Pole steel mounting brackets (b) The galvanizing thickness (c) Earthing terminal provided (d) Applicable earth conductor size (e) Rating plate as per specified	yes/no mm yes/no mm yes/no		
93	Whether for SF6 Equipment the following SF6 gas pressure sensors provided: (a) Electronic (b) Mechanical	yes/no yes/no		
94	Whether for SF6 Equipment the SF6 gas pressure sensors provided with indication	yes/no		
95	Whether the provision to prevent explosion during internal arc fault provided	yes/no		
96	Whether the provision for checking the remaining contact life of the interrupter available	yes/no		
97	Whether a warning signal will be indicated when the remaining contact life of any phase reaches zero	yes/no		

No.	Description		33 KV	11 KV
98	Whether the Software for programming the operations of the ACR is provided	yes/no		
99	Whether the programming is done by Portable computer (PC)	yes/no		
100	Are licenses required? (If yes); please specify the No. of licenses will be included in your offer.	yes/no		
101	Whether the following Test Certificates accordance with the applicable IEC standards furnished?  (a) Ageing test (b) Dielectric (c) Making and breaking current tests (d) Minimum tripping current tests (e) Partial discharge and RIV tests (f) Surge current (g) Temperature rise (h) Time - current tests (i) Mechanical operation test (j) Cable and transformer current interruption tests (k) Control unit surge withstand test	yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no		
102	Name and location of testing laboratories?			
103	Whether the Quality Assurance Certification conforming ISO 9001 furnished	yes/no		
104	Place of testing, if outside the place of manufacture			
105	Name of Manufacturer			
106	country of origin			
107	The manufacturer's years of experience for the same type of ACR provided?			
108	Whether a controller with an integral RTU provided for remote control and communication functions	yes/no		
109	The type of Communication protocol conforms to IEC 60870-5-104 IEC 60870-5-101 Modbus Serial & TCP/IP DNP3 over TCP/IP IEC 61850			
110	RTU allow remote control of all analogue and digital alarms and control points	yes/no		
111	Modem ROBUSTEL - R3000 Lite is provided	yes/no		
112	Type of Interface from controller to RTU			
113	Time synchronization method			
114	Time synchronization period (1ms)	yes/no		
115	Number of Ethernet Port (2)	yes/no		

116	Number of serial ports			
117	CPU Watchdog	yes/no		
118	Availability of events time stamping	yes/no		
119	Time resolution for SOE events (1ms)	yes/no		
120	Special user-friendly software for configuration, including any required license.	yes/no		
121	Availability to remote access for configuration	yes/no		
122	8 Inputs and 8 outputs (NC &NO)	yes/no		
123	Supports cyber-security features	yes/no		

**SCHEDULE (F)**  
**LIST OF TYPE TEST CERTIFICATES**

Tenderers shall provide the information required below for the type test certificates from a recognized testing station covering the equipment offered to BS or IEC recommendations & shall be submitted with the tender. Failure to provide copies of type test certificates/reports could result in rejection of the tender.

Type test made on identical designs of equipment to those offered	Certificate No.	Certificate Authority

**SCHEDULE (G)**

**SERVICE EXPERIENCE FOR OFFERED MATERIALS**

Tenderers shall provide the information required below for the service experience of the same offered materials.

Customer	Description	Total Qunt. (Pc.)	No. of years in service

**SCHEDULE (H)**

**DEVIATIONS FROM SPECIFICATIONS (IF ANY)**  
**TO BE COMPLETED BY THE TENDERER**

ITEM NO.	BREIF DESCRIPTION	DEVIATIONS