

# TENDER DOCUMENT

## REQUEST FOR PROPOSALS

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**TENDER NO: 27 of 2018/19**  
**Supply of High Voltage, SF6 Breakers**

**October 2018**



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# 1. INVITATION TO TENDER

## 1.1 Background

The Eswatini Electricity Company Limited (EEC) intends to upgrade and rehabilitate its aging infrastructure especially in substations. We have been using oil circuit breakers from the early seventies in the substations and lately they have developed a common problem of bursting the hydraulic pipes. This renders the breaker completely non-operational. Apart from being an environmental hazard from oil leakages, the oil usually gets contaminated considering the decades in operation. As a result, the breakers malfunction during extreme fault conditions which is a health and safety hazard to both operators and the electrical equipment it is intended to protect.

## 1.2 Objective

The objective of this tender is to procure high voltage, SF6 breakers to replace the oil circuit breakers in the system.

## 1.3 Scope of Work

This tender is limited to:

- Supply of SF6 breakers with stipulated specification and quantities.
- Delivery to Matsapha Stores, Eswatini.

The specification and quantities of the required breakers are tabulated below.

Item	Description	Technical Specification	Quantity
1.	Circuit Breaker	Potential = <b>66 kV</b> , Type = <b>SF6 Gas</b> 20mm, 3-Pole, Current = <b>2500 A</b> , Interrupt Capacity = <b>25 kA</b> , Control Voltage = <b>110Vdc</b> , Creepage distance = <b>31mm/kV</b> , Support Structures: <b>Included</b>	11
6.	Circuit Breaker	Potential = <b>132 kV</b> , Type = <b>SF6 Gas</b> 20mm, 3-Pole, Current = <b>3150 A</b> , Interrupt Capacity = <b>40 kA</b> , Control Voltage = <b>110Vdc</b> , Creepage distance = <b>31mm/kV</b> , Support Structures: <b>Included</b>	4



## 1.4 Evaluation Methodology

- The electrical contractor is expected to provide the specifications of the breakers they intend to supply. They should conform to the above stated specifications although they only describe the electrical tripping characteristics of the breaker. Therefore, the mechanical box, auxiliary switches and control cables characteristics may differ for each brand but they need to appear on the submitted specification.
- Quoted prices must be in the local currency (Emalangen) and should include all relevant levies and taxes. A filled in bill incorporating the entire tender scope in similar format to the provided template should be provided. The prices should be fixed and firm for the duration of the contract, and where there is foreign currencies involved, forward cover should be catered for.
- The Eswatini Electricity Company does not bind itself to accept the lowest or any tender. EEC also reserves the right to accept any tender in whole or in part without notice or reason. And if no tender is accepted, to abandon the enquiry or have it carried out in such a manner as it may elect or re-issue enquiry at any time of its choice.

## 1.5 Company profile and statutory documents

The proposal should have the following documents:

- Company profile
- List of similar projects
- Three reference letters from previous and / or current clients
- The following statutory documents should be submitted together with those highlighted in the data sheet:
  - Company Profile, Form J and Form C or equivalent for foreign registered companies, and Proof of registration with the relevant professional or regulatory body.
  - Certified copy of Valid Trading License.
  - Original Tax Compliance Certificate.
  - Certified copy of VAT Registration Certificate

- Police Clearance for Directors
- Certified copy of Labour Compliance Certificate
- Latest audited financial statements.

**1.6 Information to be provided by EEC**

The Eswatini Electricity Company will provide the following information:

- Equipment specification
- Any other information to be requested by the electrical supplier.

The electrical supplier is expected:

- To conform to the specification stated in the scope of works.
- Deliver the breakers in accordance to the agreed project timelines

**1.7 Timelines**

The electrical supplier is expected to have completed production of the breakers within a period of 6 months from the date of Purchase Order receipt. This timeline should include Factory Acceptance Tests.

**1.8 Evaluation Methodology**

The evaluation will be separated into two parts. First will be the technical evaluation after which the financial evaluation will be done for those suppliers that surpass the minimum accepted score for technical proposals

The weights to be used for the evaluation are as follows:

- Technical – 70%
- Financial – 30%

**1.8.1 Technical Evaluation**

Technical	Description	Maximum Points %
Approach and	Understanding of the project and scope of work (100%	20



<b>Methodology</b>	filled in schedule)	
	Conformance to specification.	10
	Detailed work plan with timeframes for the overall project (from manufacturing upto testing done within 6 months)	20
<b>Maximum Points</b>		<b>50</b>
<b>Relevant Experience of Service Provider</b>	Experience in the manufacture of circuit breakers similar to the ones required in the tender	30
	Quality certification by a recognised body (ISO etc)	20
<b>Maximum Points</b>		<b>50</b>
<b>Total Score for Technical Proposal</b>		<b>100</b>
<b>Minimum Acceptable Score for Technical Proposal</b>		<b>70</b>

### ***1.8.2 Financial Evaluation***

The financial evaluation of the bids will follow the following process:

- The evaluation team will review the financial bids and determine the evaluation price for each proposal;
- The lowest priced proposal shall be given a financial score of 100 and the other proposals shall be given a financial score which is inversely proportional to the lowest evaluated price

The following financial summary should be provided:

### ***1.8.3 Final Evaluation***

- The weighted technical and financial scores shall be added together to give a total score for each proposal
- Proposal with highest score shall be recommended for award.

## **1.9 Instructions to Tender**

### **1.9.1 Introduction**

- **Source of funds**

The Eswatini Electricity Company has made funds available towards the cost of the project for transmission expansion in various parts of the country as specified in the Scope of the Tender,

and intends to apply the funds to eligible payments under the Contract for which this Invitation to Tender is issued.

- **Employer**

The Eswatini Electricity Company, hereinafter referred to as “the Employer”, is a vertically integrated parastatal company responsible for the generation, transmission and distribution of electric power throughout Eswatini. The Employer’s address is:

Eswatini Electricity Company  
P.O. Box 258  
Mbabane  
H100  
Eswatini

Eluvatsini House  
Mhlambanyatsi Road  
Mbabane  
Eswatini

Telephone: +268 409 4000

Facsimile: +268 409 4001

- **Engineer**

The Engineer appointed by the Employer for the purpose of the project is:

The Eswatini Electricity Company’ Project Manager

Address is the same as above.

- **Scope of Tender**

Eligible Tenders are invited to submit Tenders for the Project. The Project covers the civils design and construction of line bay plinths, access road and control room.

- **Eligible Tenderers**

The invitation to Tender is open to suitably qualified and capable contractors with a track record and financial backing to deliver a turnkey project.

- **Subcontractors**

It is a requirement that non specialised work be subcontracted to suitably qualified local Subcontractors.

- **Cost of Tendering**

The Tenderer shall bear all costs associated with preparation and submission of its Tender, and the Employer will in no case be responsible or liable for those costs, regardless of the outcome of the tendering process.

## 1.9.2 Tender Documents

- **Modifications**



Tenderers shall not make any modifications to the Tender Document. Should a Tenderer notice any clause or item which he considers necessary to be changed, he shall notify the Engineer in writing, and the Engineer will in turn investigate and reply in writing.

- **Checking of Tender Documents**

On receipt of the Tender Documents, the Tenderer must prior to submitting his Tender, check all the Tender Documents and should any difference or discrepancy between or in the Drawings and Specification be detected by the Tenderer, he shall seek in writing a decision also in writing of the Engineer on the true intent and meaning of the Tender documents as the Employer cannot be held liable for the additional cost of extra work that may be caused as a result thereof.

- **Clarification of Tender Document**

A prospective Tender requiring any clarification of the Tender Documents may notify the Engineer in writing. The Engineer will respond in writing to any request for clarification of the Tender Documents, which it receives no later than three weeks prior to the deadline for submission of Tenders prescribed by the Employer. Written copies of the Engineer's response (including an explanation of the query but without identifying the source of the inquiry will be sent to all prospective Tenderers who have received the Tender Document.

- **Amendment of Tender Document**

At any time prior to the deadline for submission of Tenders, the Employer may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Tenderer, modify the Tender Documents by amendment. If this modification occurs later than one week before the deadline for the submission Tenders, the Employer has the right of extending the deadline for the submission in order to give other Tenderers the necessary time for considering the modifications in the preparation of their Tenders.

The amendment will be notified in writing or by cable (hereinafter, term cable is deemed to include Electronic Data Interchange (EDI), telex or facsimile) to all prospective Tenderers, which have received the Tender Document and will be binding to them.

- **Tender Documents and Ownership**

The Tender Documents which have been made available to Tenderers are the property of the Employer and shall be returned to the Engineer whether or not a Tender is submitted.

- **Documents Confidential**

Tenderers shall treat the details of the Tender Documents as confidential, whether they submit a Tender or not.

### **1.9.3 Preparation of Tenders**

- **Language of Tender**

The Tender prepared by the Tenderer and all correspondences and documents relating to the Tender exchanged by the Tenderer, the Engineer and the Employer, shall be written in the English language, provided that any printed literature furnished by the Tenderer may be written

in another language on condition that it is accompanied by an English translation in which case, for purposes of interpretation of the Tender, the English translation shall govern.

- **Tender Site Meeting**

It is required that all prospective Tenderers attend a pre-tender site meeting and site visit as indicated in the Invitation for Tender. Failure to attend will result in disqualification of the Tender. The cost of attending the meeting shall be at the Tenderer's own expense.

- **Tender Prices**

Tenders shall quote for the facilities on a "single responsibility" basis such that the total Tender Price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the Tender Documents in respect to the design, manufacture, including procurement and subcontracting if any, delivery, construction, installation and completion of the facilities. This includes all requirements under the Contractor's responsibility for testing, pre-commissioning and commissioning of the facilities and, where so required by the Tender Documents, the acquisition of all permits, approvals and licenses, etc, training services and such other items and services as may be specified in the Tender Document, all in accordance with the requirements of the General Conditions of the Contract. Items against which no price is entered by the Tenderer will not be paid for by the Employer when executed and shall be deemed to be covered by the prices for other items.

Tenderers are required to quote the price for commercial, contractual and technical obligations outlined in the Tender Documents. If a Tenderer wishes to make a deviation, such deviation shall be listed in Attachment 6 of its Tender. The Tenderer shall also provide the additional price, if any, for withdrawal of the deviations. Deviations without an additional price for its withdrawal will be accepted at **no cost**.

Tenderers shall give a breakdown of the prices in a format similar to the one provided.

Plant and equipment to be supplied from abroad shall be quoted on **CIP** to site basis. The term CIP is described in the current edition of Incoterms.

Installation Services shall include rates or prices for all labour, contractor's equipment, temporary works, materials, consumables and all matters and things of whatsoever nature, including operations and maintenance services, the provisions of operations and maintenance manuals, training etc, where identified in the Tender Documents, as necessary for proper execution of Installation Services, including all taxes, duties, levies and charges payable in the Employer's country as of 28 (twenty-eight ) days prior to the deadline of submission of Tenders.

Recommended spare parts shall be quoted separately and **not included** in the Grand Summary.

Prices quoted by the Tender shall be **FIXED** for the duration of the Contract and will not be subject to the adjustments for change in cost. **A Tender submitted with an adjustable price quotation will be treated as non-responsive and rejected.**

Applicable rates of exchange as determined by the Central Bank of Swaziland on the date of the Tender closure will be applicable for the duration of the Contract. Tenderers will be responsible for acquiring forward cover against the exchange rates fluctuations. **NO** adjustments for the changes in cost will be accepted for the duration of the Contract. The Contractor shall submit

proof of forward cover on the relevant portions of the Contract within 28 days after award of Contract.

All taxes including VAT, levies and custom duties etc, as applicable to the Works and determined 28 (twenty-eight) days prior to Tender submission, shall be deemed included in the Tender Prices. If there are or may be exemptions from levies, customs duties, tax, etc applicable to any aspect of the works, the Tenderer must make his own arrangements thereof, as the tender price shall be regarded as comprehensive.

The Tenderer, if registered in Swaziland, is liable for income tax or other national or local taxes applicable in the country in connection with the execution of the Contract. The Tenderer, if not registered in Swaziland, is liable only to **15 (fifteen) percent Withholding Tax** in line with the Income Tax Act Directive on non-resident Contractors/Suppliers.

- **Tender Currencies**

Tender prices shall be quoted in Emalangeni (SZL) or South African Rand (ZAR).

The point of payment will be Swaziland.

- **Period of Validity**

The Tender shall remain valid for **90** (ninety) days after the Tender closing date. A Tender valid for a shorter period shall be rejected by the Employer as being non-responsive.

In exceptional circumstances the Employer may solicit the Tenderer's consent to an extension of the Tender validity period. The request and responses thereto shall be made in writing or by cable. A Tenderer granting the request will not be required or permitted to modify its Tender.

- **Format and Signing of Tender**

The Tender shall prepare one original and two complete copies of the Tender (Technical and financial) and clearly marking each one respectively as "Original Tender", "Copy No. 1" and "Copy No. 2." In the Event of any discrepancy between them, the original shall govern.

The original and all copies of the Tender, each consisting of the documents listed above shall be typed or written in indelible ink and shall be signed by the Tenderer or person or persons duly authorised to bind the Tenderer to the Contract. The latter authorisation shall be indicated by written power of the attorney accompanying the Tender and submitted as Attachment 2 to the Tender. All pages of the Tender except for un-amended printed literature shall be initialled by the person or persons signing the Tender.

The Tender shall contain not alterations, omissions or additions, unless such corrections are initialled by the person or persons signing the Tender.

#### **1.9.4 Submission of Tenders**

- **Sealing and Marking**

The Tenderer shall Seal The Original and each Copy of the Tender in separate envelopes, duly marking the envelopes as “Original Tender”, “Copy No.1” and “Copy No.2.” The envelopes shall then be sealed in an outer envelope. This should be done for the technical proposal and financial proposal, ie the technical and financial should be in separate envelopes.

The inner and outer envelopes shall:

Be addressed to the Employer at the address given, and

Bear the Tender Number and the statement “DO NOT OPEN BEFORE” and the closing date for Tendering, excluding any notice allowing identification of the Tenderer.

If the outer envelope is not sealed and marked as requested, then the Employer will assume no responsibility for the Tender’s misplacement or premature opening. If the outer envelope discloses the identity of the Tenderer, the Employer will not guarantee the anonymity of the Tender submission, but this disclosure will not constitute grounds for Tender rejection.

- **Deadline for Submission of Tenders**

Tenders must be received by the Employer at the address no later than the time and date stated in the Invitation for Tender.

The Employer may, at its discretion, extend this deadline for submission of Tenders by amending the Tender Documents in which case all rights and obligations of the Employer and Tenderers will thereafter be subject to the deadline as extended.

- **Late Tenders**

Any Tender received after by the Employer after the Tender submission deadline prescribed by the Employer will be rejected and returned unopened to the Tenderer.

- **Modification and Withdrawal from Tenders**

The Tenderer may modify or withdraw its Tender after submission, provided that written notice of the modification or withdrawal is received by the Employer prior to the deadline prescribed for Tender submission.

The Tenderer’s modifications shall be prepared, sealed, marked and dispatched as follows:

The Tender shall provide an original and the number of copies specified of any modifications to its Tender, clearly identified as such, in two inner envelopes duly marked “Tender Modification – Original” and “Tender Modification – Copies.” The inner envelopes shall be sealed in an outer envelope, which shall be duly marked “Tender Modifications.”

A Tenderer wishing to withdraw its Tender shall notify the Employer in writing prior to the deadline prescribed for Tender submission.

The notice of withdrawal shall:

Be addressed to the Employer at the address specified, and

Bear the Tender Number and the words “Tender Withdrawal Notice.” Tender withdrawal notices received after the Tender submission deadline will be ignored, and the submitted Tender will be deemed to be a validly submitted Tender.

No Tender may be withdrawn in the interval between the Tender submission deadline and the expiry of the Tender validity period specified.

### **1.9.5 Tender Opening and Evaluation**

- **Opening of Tender by Employer**

The Employer will open the Tenders, including withdrawals and the modifications made in the presence of Tenderer's designated representatives who choose to attend, at the time, date and location specified. The Tenderers' representatives who are present shall sign a register to provide evidence of their presence.

Envelopes marked "Withdrawal" shall be opened first and the name of the Tenderer shall be read out. Tenders for which an acceptable notice of withdrawal has been submitted pursuant shall not be opened.

The Tenderer's names, the Tender Prices including any alternative Tender Price or deviation any discounts, Tender modifications and withdrawals, and any such other details as the Employer may consider appropriate, will be announced by the Employer at the opening.

Subsequently, all envelopes marked "Modification" shall be opened and the submissions therein read out in appropriate detail.

No Tender shall be rejected at Tender opening except for late Tenders

The Employer shall prepare minutes of the Tender opening, including the information disclosed to those present.

Tenders not opened and read out at the Tender opening shall not be considered further for evaluation, irrespective of the circumstances.

- **Clarification of Tenders**

During the Tender evaluation, the Employer may, at its discretion, ask the Tenderer for clarification of its Tender.

The request for clarification and the response shall be in writing and no change in the price or substance of the Tender shall be sought, offered or permitted.

- **Preliminary Examination of Tenders**

The Employer will examine the Tenders to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Tenders are generally in order.

Arithmetic errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotals and the total price, the unit or subtotal price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures the amount in words will prevail. If the Tenderer does not accept the correction of errors its Tender will be rejected.

Prior to the detailed evaluation, the Employer will determine whether each Tender is of acceptable quality, is complete and substantially responsive to the Tender Documents. For

purposes of this determination, a substantially responsive Tender is one that conforms to all terms, conditions and specifications of the bidding documents without material deviations and objections, conditionalities or reservations. A material deviation, objection, conditionality or reservation is one (i) that affects in any substantial way the scope, quality or performance of the contract; (ii) that limits in any substantial way, inconsistent with the Tender Documents, the Employer's rights or successful Tenderer's obligations under the contract; or (iii) whose rectification would unfairly affect the competitive position of other Tenderers who are presenting substantially responsive.

If a Tender is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by the Tenderer by correction of the non-conformity. The Employer's determination of a Tender's responsiveness is based on the contents of the Tender itself without recourse to extrinsic evidence.

- **Contacting the Employer**

From the time of the tender opening to the time of Contract award, if any Tenderer wishes to contact the employer on any matter related to its Tender, it should do so in writing.

Any effort by a Tenderer to influence the Employer in the Employer's Tender evaluation, Tender comparison or Contract award decisions may result in rejection of the Tenderer's Tender.

## **1.9.6 Award of Contract**

- **Award Criteria**

The Employer may award the contract to the Tenderer whose Tender has been determined to be substantially responsive and provided that the Tenderer is determined to be qualified to perform the Contract satisfactorily. The Employer is not bound to accept the lowest Tender or any at all and no reasons will be given for non-acceptance of Tender.

- **Employer's Right to Accept Any Tender and to Reject Any or All Tenders**

The Employer reserves the right to accept or reject any Tender, and to annul the Tendering process and reject all Tenders at any time prior to award of Contract, without thereby incurring any liability to the affected Tenderer or Tenderers or any obligation to inform the affected Tenderer or Tenderers of the grounds for the Employer's action.

- **Employer's Right to Vary Quantities at Time of Award**

The Employer reserves the right at the time of award of Contract to increase or decrease the quantities of goods and services up to 25% of the Total Tender Price without any change in unit prices, Preliminary and General cost, or other terms and conditions.

- **Pre-Award Negotiations**

Prior to the expiry of the period of Tender Validity, the Employer will invite the successful Tenderer to his office for Contract negotiations.

The successful conclusion of the Contract Negotiations will constitute the formation of the Contract.

The Employer shall prepare the Minutes of Contract Negotiations which shall form part of the Contract.

Upon the successful Tenderer's furnishing of a Performance Security the Employer will promptly notify each unsuccessful Tenderer and will discharge its Tender Security.

- **Signing the Contract Agreement**

The Employer will send the Tenderer the Contract Agreement provided in the Tender Documents, incorporating all agreements between parties.

Within 28 (twenty-eight) days of receipt of the Contract Agreement, the successful Tenderer shall sign and date the Contract Agreement and return it to the Employer.

- **Performance Security**

Within 28 (twenty-eight ) days after successfully concluding the Contact negotiation, the successful Tenderer shall furnish the Performance Security in the amount of 10% (ten percent) of the accepted Contract Amount and in the form provided in the Tender Documents or in another form acceptable to the Employer.

Failure of the successful Tenderer to comply shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security, in which event the Employer may make the award to the next most advantageous evaluated Tenderer or call for new Tenders.

- **Corrupt or Fraudulent Practices**

**Any Tenderer that is found to be, or who attempts to be involved in any corrupt or fraudulent activity or practice involving any party concerned in the Tender process, shall be disqualified. The Tenderer may forfeit the Tender Security.**

## 2. APPENDIX TO TENDER

The Appendix to refers to the Conditions of Contract for Plant and Design Build for Electrical and Mechanical Works and for Building and Engineering Works, Designed by the Contractor, First Edition 1999 as published by FIDIC.

<b>Item</b>	<b>Sub Clause</b>	<b>Data</b>
Employer's Name and Address	1.1.2.2 & 1.3	ESwatini Electricity Company P.O. Box 258, Mbabane, H100 Eswatini.
Contractor's Name and Address	1.1.2.3 &	



<b>Item</b>	<b>Sub Clause</b>	<b>Data</b>
	1.3	
Engineer's Name and Address	1.1.2.4 & 1.3	Same as the Employer
Time for Completion of Works	1.1.3.3 & 8.2	14 Months
Defects Notification Period	11.1	365days
Electronic transmission systems	1.3	Add facsimile and electronic documents in PDF format
Governing Law	1.4	Law of the Kingdom of Eswatini.
Ruling Language	1.4	English
Language for communication	1.4	English
Time for access to site	2.1	14 days after Commencement Date
Amount of Performance Security	4.2	10% of the Accepted Contract Amount in the Emalangeni (SZL) or South African Rand (ZAR)
Period for notifying unforeseeable errors faults and defects in the Employer's Requirements	5.1	14 days
Normal Working hours	6.5	7:00 till 18:00
Sections	8.2	Section is defined as an entire substation, entire line or cable that can be energised
Delay damages for the Works	8.7 & 14.15(b)	0.1% of the final Contract Price per day, in the currency and proportions in which the Contract Price is payable
Maximum amount of delay damages	8.7	10% of final Contract Price
Percentage for adjustment of	13.5(b)	Not applicable





<b>Item</b>	<b>Sub Clause</b>	<b>Data</b>
Provision Sums		
Adjustment for Changes	13.8	Not applicable – no adjustment
Total advance payment	14.2	10% of the Accepted Contract Amount
Number and timing of installations	14.2	One single payment within 42 days of the letter of receipt of advance payment invoice and advance payment guarantee.
Currencies and proportions	14.2	100% in tendered currency
Start repayment of advance payment	14.2(b)	10% on all certificates less provisional sums irrespective of value
Repayment amortisation of advance payment	14.2(b)	10%
Minimum period of Interim Payment Certificate	14.4	No less than one calendar month.
Percentage of Retention	14.3	5% of the Acceptable Contract Amount
Limit of Retention Money	14.3	5% of the Acceptable Contract Amount
Plant and Materials for payment when shipped en route the Site	14.5(b)	Nil
Pant and Materials for payment when delivered to the Site	14.5(c)	All equipment
Minimum Amount of Interim Payment Certificates	14.6	1% of the Acceptable Contract Amount
Payment of Retention Money for Sections	14.9	The relevant percentage shall be the proportion of the Section's price to the Accepted Contract Amount
Currency/currencies of payment	14.15	Emalangeneni or South African Rand

<b>Item</b>	<b>Sub Clause</b>	<b>Data</b>
Periods of submission of Insurance:		
(a). Evidence of Insurance	18.1	28 days
(b). Relevant Policies	18.1	28 days
Minimum amount of third party insurance	18.3	E2 000 000 (Two million Emalangi)

### 3. GENERAL CONDITIONS OF CONTRACT

The Conditions of Contract applicable to this contract shall be:

#### **FIDIC (International Federation of Consulting Engineers)**

Condition of Contract for Plant and Design Build for Electrical and Mechanical Works and for Building and Engineering Works, Designed by the Contractor. First Edition. 1999. (Yellow Book).

The Conditions consists of three parts, namely

1. General Conditions of Contract.
2. Appendix to Tender.
3. Particular Conditions of Contract.

The Tenderer must obtain a copy of this document from the Federation, at their own cost. The document will not be made available by the Employer or the Engineer.

The Tenderers must familiarise themselves with the conditions and stipulations contained therein. No arguments, disagreement or complaint, based on ignorance of the contents of the mentioned document, will be considered as a base for a claim against the Employer.

Copies of the FIDIC Conditions of Contract may also be obtained from:

The South African Association of Consulting Engineers,  
 St James House  
 Hampton Park North  
 20 Georgian Crescent  
 Bryanston

P.O. Box 68482  
 Bryanston  
 2021



#### **4. PARTICULAR CONDITIONS OF CONTRACT**

This Particular Conditions of Contract is in reference to the General Conditions of Contract as contained in the FIDIC's Conditions of Contract for Plant and Design, Build for Electrical and Mechanical Works and for Building and Engineering Works, Designed by the Contractor. First Edition. 1999. (Yellow Book)

##### **Clause 1 General Provisions**

##### **Sub-Clause 1.1 Definitions**

1.1.1.1 Add "Minutes of Negotiation" after "Contract Agreement."

1.1.1.5 The Employer's Requirements are detailed in Part II of the Tender Document

1.1.4.6 The Foreign Currency is **South African Rand**

1.1.6.2 "Country" shall mean Eswatini.

##### **Sub-Clause 1.2 Priority of Documents**

Replace the list of documents with the following list

- (a) Contract Agreement
- (b) Minutes of Contract Negotiations
- (c) Letter of Acceptance
- (d) Letter of Tender
- (e) Particular Conditions of Contract
- (f) General Conditions of Contract
- (g) Employer's Requirements
- (h) Schedules, and
- (i) Contractor's Proposal and any other documents forming part of the Contract.

##### **Sub-Clause 1.14 Joint Several Liability**

Insert after Sub-Clause 1.14(c):

- (d) Each member shall produce parent member guarantee.

##### **Sub Clause 1.15 Details to be Confidential**

The Contractor shall treat the details of the Contract as private and confidential, except to the extent necessary to carry out obligations under it or to comply with applicable Laws. The



The Contractor shall at its own cost pay all charges in connection with or arising out of the provision of electricity and water including, without limitation, the provision of any apparatus necessary for such use and the removal and making good on completion of the Works.

**Clause 13 Variations and Adjustments**

**Sub-Clause 13.1 Right to Vary**

Insert after the first paragraph of Sub-Clause 13.1:

During the Time for Completion the Works may be increased or reduced by up to 25% of the Accepted Contract Amount without adjustment to the rates tendered, Preliminary and General cost, or other terms and conditions.

**Clause 14 Contract Price and Payment**

**Sub-Clause 14.4 Schedule of Payment**

Insert at the end of Sub-Clause 14.4

The contractor will be paid after 30 days from receipt of the invoice, and payments at ESwatini Electricity Company are made on the 15<sup>th</sup> and 30<sup>th</sup> of each month. The payments will be according to the contractor's payment schedule.

**Clause 17 Risks and Responsibility**

**Sub-Clause 17.7 Use of Employer's Facilities**

The Contractor shall take full responsibility for the care of items detailed below, from the respective dates of use or occupation by the Contractor, up to the respective dates of hand-over or cessation of the occupation (where hand-over or cessation of occupation may take place after the date stated in the Taking-Over Certificate for the Works):

The Employer's existing Works and Plant

If any loss or damage happens to any of the above items while the Contractor is responsible for their care, arising from any cause whatsoever other than those for which the Employer is liable, the Contractor shall, at his own cost, rectify the loss or damage to the satisfaction of the Engineer.

**Clause 20 Claims, Disputes and Arbitration**

**Sub-Clause 20.2 Appointment of the Dispute Adjudication Board**

Delete this Sub-Clause.

**Sub-Clause 20.3 Failure to Agree Dispute Adjudication Board**

Delete this Sub-Clause.

**Sub-Clause 20.4 Obtaining Dispute Adjudication Board's Decision**

Delete this Sub-Clause.

**Sub-Clause 20.5 Amicable Settlement**

Delete this Sub-Clause.



### **Sub-Clause 20.6 Arbitration**

Delete this Sub-Clause and replace it with:

Unless settled amicably, any disputes shall be settled by international arbitration. Unless otherwise agreed by both parties:

- 1.3 the dispute shall be finally settled under the Rules of the Conduct of Arbitrations (5<sup>th</sup> Edition 2005) of the Association of Arbitrators (Southern Africa) within the context of the Law defined in Sub-Clause 1.4
- 1.4 The dispute shall be settled by the arbitrator(s) appointed in accordance with the Rules and
- 1.5 The arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4

The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer relevant to the dispute. Nothing shall disqualify the Engineer from being called as witness and giving evidence before arbitrator(s) on any matter relevant to the dispute.

Neither party shall be limited to the reasons for dissatisfaction given in its notice of dissatisfaction.

Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties shall not be altered by reason of any arbitration being conducted during the progress of the Works.

### **Sub-Clause 20.7 Failure to Comply with Dispute Adjudication Board's Decision**

Delete this Sub-Clause

### **Sub-Clause 20.8 Expiry of Dispute Adjudication Board's Appointment**

Delete this Sub-Clause

## 5. TENDER FORM

*Tenderers must complete one tender form for each Lot they are offering services for*

Date .....

Tender No. \_\_\_\_\_

To:

**ESwatini Electricity Company  
Eluvatsini House  
Mhlambanyatsi Road  
Mbabane  
Kingdom of ESwatini**

Having examined the tendering documents the receipt of which is hereby duly acknowledged, we, the undersigned, offer to undertake the maintenance and service of *[State the particular groups that you are tendering for]* at *[State Locations]* in conformity with the said tendering documents for the sum of *[total tender amount in words and figures]* and at the rates indicated in the Pricing Form and made part of this Tender.

We undertake, if our Tender is accepted, to deliver the services in accordance with the requirements of the specifications forming part of this contract.

We agree to abide by this Tender for a period of 90 days from the date fixed for Tender opening, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Tender, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any tender you may receive.

\_\_\_\_\_  
[signature] [in the capacity of]

Duly authorized to sign Tender for and on behalf of \_\_\_\_\_

\_\_\_\_\_



## 6. DECLARATION OF ELLIGIBILITY

All Tenderers must meet the following criteria, to be eligible to participate in public procurement  
*Tenderers must provide a signed declaration on their company letterhead in the following format. If the tender is being presented by a joint venture or consortium all members must sign the declaration*

Dear Sirs,

Re Tender Reference .....

In accordance with the eligibility requirements of the Procurement Regulations and the tender documents we hereby declare that:-

- (a) We, including any joint venture partners or consortium partners are a legal entity and have the legal capacity to enter into the contract;
- (b) We further declare that we are not insolvent, in receivership, bankrupt or being wound up, our affairs are not being administered by a court or a judicial officer, our business activities have not been suspended and we are not the subject of legal proceedings for any of the foregoing;
- (c) We declare that we have fulfilled our obligations to pay taxes and social security contributions;
- (d) We have not, and our directors or officers have not, been convicted of any criminal offence related to our/their professional conduct or the making of false statements or misrepresentations as to their qualifications to enter into a contract within a period of five years preceding the commencement of the procurement proceedings; and
- (e) We do not have a conflict of interest in relation to the procurement requirement.

**Signed** .....

**Date**.....





## 7. DATA SHEET

1	Eligibility criteria	<p>All required documentation and information highlighted below has been submitted.</p> <ol style="list-style-type: none"> <li>i. Company Profile, Form J and Form C or equivalent for foreign registered companies, and Proof of registration with the relevant professional or regulatory body.</li> <li>ii. Certified copy of Valid Trading License.</li> <li>iii. Original Tax Compliance Certificate.</li> <li>iv. Certified copy of VAT Registration Certificate</li> <li>v. Police Clearance for Directors</li> <li>vi. Certified copy of Labour Compliance Certificate</li> <li>vii. Latest audited financial statements.</li> <li>viii. Original Receipt for Purchase of Tender Document</li> </ol> <p>NB: A tender which does not contain the documents listed above shall be deemed to be non-responsive and eliminated from further evaluation</p>
2	Qualification criteria	<p>Qualifications will be evaluated as follows:</p> <ul style="list-style-type: none"> <li>- Demonstrated experience in at least three similar projects</li> </ul>
3.	Validity	<p>The tender shall be valid for <b>90 days</b> from the submission/closing date. A tender with less than 90 days validity will be deemed non-responsive.</p>
5	Prices	<p>Quoted prices must be in the local currency (Emalangenzi) and should include all relevant levies and taxes. A filled in bill incorporating the entire tender scope in similar format to the provided template should be provided. The prices should be fixed and firm for the duration of the contract, and where there is foreign currencies involved, forward cover should be catered for.</p>
6	Documents comprising the tender	<p>The documentation required for this tender are:</p> <p>Document 1:</p> <ol style="list-style-type: none"> <li>1. Signed Tender Form, and Declaration of Eligibility</li> <li>2. Company profile, statutory documents, qualifications criteria related documents etc, as highlighted in the document</li> <li>3. Proof of tender payment</li> <li>4. Power of attorney</li> </ol>

		<p>5. Methodology as per the requirements of the tender</p> <p>6. Preliminary working programme</p> <p>7. Recommended spare parts where applicable</p> <p>8. Exclusions of the tender</p> <p>Document 2</p> <p>1. Price schedule and tender validity</p>
7	Tenderer's request for clarification	<p>The deadline for clarifications shall be one week before the closing date.</p> <p>Clarification can be submitted until the <b>09 November 2018</b></p>
8	Tender submission	<p>The location for submission of tenders is</p> <p><b>EEC Main Tender Committee</b>  <b>P O Box 258</b>  <b>Mbabane</b></p> <p>The following information should be considered:</p> <ul style="list-style-type: none"> <li>• The technical and financial proposals should be separated and clearly marked “<b>TECHNICAL</b>” and “<b>FINANCIAL</b>”.</li> <li>• A signed bid clearly marked “<b>TENDER NO. 27 OF 2018/19</b>” should be deposited in the tender box situated at the EEC Head Office, Eluvatsini House, Mhlambanyatsi road, Mbabane, Eswatini. If posted, the tender documents must reach the EEC on or before the closing date, marked for the attention of the “<b>Secretary to the Tender Committee</b>”.</li> <li>• Submissions should be no later than <b>1400hrs on 16 November 2018</b>.</li> <li>• Document should be submitted with proof of payment of <b>E500.00</b> for tender documentation.</li> </ul>
9	Tender opening	<p>Tenders will be opened at <b>1400hrs on 16 November 2018</b> at EEC Headquarters, Eluvatsini House, Mhlambanyatsi road, Mbabane</p>
10	Evaluation of tenders	<p>The evaluation criteria is detailed in the <b>Evaluation Methodology</b> section of the tender document.</p>
11	Intention to award	<p>Tenderers will be notified of an intention to award on the same day that the intention is sent to the Swaziland Public Procurement Regulatory Agency (SPPRA).</p>

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## 8. SPECIFICATION

### 1. General

The 66kV circuit breakers shall be of the SF6 type as specified and conform to the latest edition of the IEC Standards.

Circuit breakers shall be of the three-pole, single mechanism type, with spring operating mechanism. Spring charging shall be done by means of an electric motor.

The circuit breakers shall be complete with a suitable mounting structure, mechanism, enclosure and terminal- and marshalling boxes. The terminal- and marshalling-boxes and mechanism cubicles shall comply with the standard specification for these items.

#### 8.3.6. Capacity

Each circuit breaker shall be capable of making and breaking short circuit faults without undue stress, in accordance with the quantities, factors and service operation requirements specified for the three phase short circuit rating specified in the Detailed Technical Specification.

Certified evidence, from a recognised short circuit testing authority, of the prototype test applied to each class of circuit breaker shall be submitted with the Tender in support of the maximum working conditions claimed for the circuit breaker offered.

The test duty shall not be less than the requirements of IEC 56. Where not stated in the test certificate, the Contractor shall certify that the rate of rise of re-striking voltage, to which the circuit breaker was subjected during the short circuit tests, did not differ from the inherent rate of rise pertaining to the particular test connections employed.

Where any modification was made to the test connections to control the rate of rise of recovery voltage, full particulars shall be provided with the Tender and the acceptance of such test shall be subject to approval.

No part or component of the circuit or any equipment in the circuit breaker shall be permanently influenced electrically or mechanically when the full rated current is interrupted. There shall be no spillage of oil and the breaker shall be immediately available for re-use.

The circuit breakers shall be capable of interrupting all currents from zero to the full symmetrical and asymmetrical rated fault currents at rated recovery voltage and of performing all duties laid down in the Detailed Technical Specification.

The current carrying and voltage rating shall be in accordance with the Detailed Technical Specification. It shall be indicated that the circuit breakers are re-strike-free when switching capacitive currents as specified in I.E.C. Publication 56-2 table IX.

Complete descriptive drawings, technical literature and sketches of the mechanical assembly of the circuit breaker shall be submitted with the Tender

### **8.3.7. Circuit Breaker Operating Mechanism**

The circuit breaker shall be designed for local and remote electrical control.

The circuit breaker shall be fitted with a trip-free operating mechanism which shall be spring operated, wound by an electric motor.

Means shall be provided for manual operation of all circuit breakers for maintenance purposes.

All types of operating mechanisms shall be designed such that the circuit breaker is free to open immediately when the trip coil is energised. Where the design does not permit this except in the fully closed position, the Contractor shall indicate this deficiency.

An approved mechanically operated indicator shall be provided on each circuit breaker mechanism to show whether the circuit breaker is open or closed.

Electrically operated circuit breakers shall be operated by a solenoid or electro-magnet and arranged to operate as rapidly as possible. The power supply for electrical operation shall be stated in the Detailed Technical Specification. The electrical closing devices shall operate successfully between the temperature and voltage limits of BS 116 with the coils at a temperature of 40°C.

Closing and tripping devices shall operate satisfactorily at the voltage existing when the battery is being charged at the normal rate. Spring-operated mechanisms shall be arranged for charging by motor. A local release shall be provided, with mechanical indication of spring charge. Provision for remote indication of spring charge shall be made and for automatic spring charging. The mechanism shall be such that the closing spring can be charged while the circuit breaker is closed, and the closing mechanism when charged shall not be operated by vibration caused by the circuit breaker opening on fault.

In the event of failure to latch in the closed position, it shall not be possible for the circuit breaker to open except at normal speed. Means shall be provided for slow closing of the circuit breaker for maintenance purposes. Where separate operating mechanisms are provided for each phase, approved means shall be provided to ensure simultaneous operation of the three phases. Mechanisms shall be so designed as to minimise the possibility of making or breaking one or two phases only. Provision shall be made for automatic tripping of the circuit breaker in the event of any phase failing to complete a closing operation. Where circuit breakers consist of three separate units with a common operating mechanism they shall be so coupled that any unit can readily be replaced by a spare unit. It shall be possible to make independent adjustments on each unit. The operation of the three single pole units shall be simultaneous.

The speed of travel of the circuit breaker contacts under normal operating and automatic tripping conditions shall be stated in the schedules. The various parts shall be of substantial construction, carefully fitted so as to ensure free action and the design shall be such as to reduce mechanical shock during operation to a minimum, and to prevent inadvertent operation due to vibration or other cause.

An emergency manual-tripping device arranged for operation from outside the local control cubicle, and incorporating a padlocking facility, shall be provided on each circuit breaker.

To ensure the operation of circuit breaker trip coils with faulty or dirty breaker auxiliary contacts, two contacts in parallel shall be included in all tripping circuits.

Mechanism motors shall be suitable for D.C. operation at the voltage specified in the Detail Specification. The motors shall be fitted with motor control contactors and thermal overload protection.

The mechanism boxes shall also house "Local/remote" lockable change-over control switches, "Trip/close" control switches with mechanical sequence devices, cubicle heaters and small wiring, outgoing type terminal blocks, fuses and links.

### **8.3.8. Gas Filled Breakers (SF6)**

Circuit breakers shall be provided complete with gas. The gas pressure must continually be monitored (with temperature compensated pressure monitoring devices). Low pressure alarms and switching lockout shall be provided. The low-pressure alarm must be initiated well before the switching lockout becomes necessary.

The insulating and arc extinguishing media shall be sulphur-hexafluoride (SF6).

The pressure of the SF6 inside the epoxy resin containers shall be maintained at a level where the breakdown voltage of the gas is at a maximum during the opening of the circuit breaker. A spare bottle of gas shall be supplied with each circuit breaker. The design of the breaker shall be such that it will still be able to interrupt full load current at zero gauge pressure. A pressure gauge with alarm contacts, for remote indication, shall be mounted on each circuit breaker. The low-pressure alarm contact shall be interlocked with the closing circuit of the breaker to ensure that the breaker cannot be closed after a trip, if gas pressure is low.

New sulphur-hexafluoride (SF6) gas shall be supplied. The method of filling gas shall ensure that the gas is as pure and dry as necessary for the conditions of service. The SF6 gas shall comply with the recommendations of IEC specification No. 376.

### **8.3.9. Auxiliary Switches**

The minimum number of spare normally-open and normally-closed auxiliary contacts on each circuit breaker auxiliary switch, extra to those required for normal control and interlocking, shall be as stated in the Detailed Technical Specification. These spare contacts shall be easily convertible from normally open to normally closed, or vice versa.

All contacts shall be wired to the terminal boards for connection to external apparatus.

One "fleeting" auxiliary switch contact shall be provided on each mechanism for indication of the circuit breaker operation. This contact shall be in the normally open state when the circuit breaker is either open or closed. The fitting of auxiliary relays to achieve the number of auxiliary contacts required will not be acceptable. Oil circuit breakers having two or more series breaks per phase shall be mechanically and/or pneumatically interlocked to ensure that all breaks operate simultaneously.

### **8.3.10. Auto-Re-Closing**

If auto-re-closing is required, the circuit breakers shall be capable of tripping and re-closing the specified number of times. The phases shall operate independently or together as the type of re-closing dictates, with a dead time not exceeding that specified the Detailed Technical Specification. Control of the re-closing cycle and the re-closing impulse will be provided by a re-closing relay mounted on the breaker control panel.

### **8.3.11. Testing**

#### **General**

Type testing shall be carried out on one circuit breaker of each type, which shall be complete with built-in current transformers. If evidence is available of type tests on identical equipment, manufactured in the same works this may be acceptable in lieu of these tests, at the discretion of the Engineer.

#### **Impulse Type Tests**

The test procedure to be adopted when impulse testing a circuit breaker shall be as detailed in IEC 56-4 Chapter 3, Part 4, with reference also to IEC 60 on the techniques of testing. The test voltage is specified.

#### **Power-frequency Voltage Wet Tests**

The conditions under which the external insulation of the circuit breakers shall be wet tested, for sixty seconds, are detailed in IEC 56-4 Chapter 3 Part 4. Reference should also be made to IEC 60 on the techniques of testing.

#### **Making and Breaking Capacity Tests**

Circuit breaker making and breaking capacity type tests and test conditions are specified in IEC 56-1. Where the applied voltage, recovery voltage or rate of rise of recovery voltage is below rated value, even for a single phase test, recourse may be made to unit testing in accordance with IEC 56-1A. Each unit however, shall be tested at full rated making and breaking current and rated unit recovery voltage as a minimum requirement.

Synthetic tests designed to test more than one unit and which are in addition to the unit tests, will be acceptable.

#### **No-load Line, Cable and Transformer Switching Tests**

In addition to the above tests, supplementary tests to prove magnetising and charging current interruption shall be made. For a guide to the testing of circuit breakers with respect to the switching of unloaded lines and cables, reference should be made to IEC 56-5 and IEC 56-6 respectively.

If a circuit breaker is specified as being required to interrupt line charging currents or transformer magnetising current without producing excessive over-voltages, sufficient evidence shall be submitted to prove the values guaranteed.

For re-striking oil circuit breakers, proof shall be submitted that the explosion pots can withstand the arc energy of at least one full major re-strike as well as the number of re-strikes quoted.

### **Short-time Current Tests**

Test details and requirements are given in Clause 66 of IEC 56-1. The test current shall be maintained for a period of three seconds.

#### **2.4.7.7 Power-frequency Voltage Tests**

High voltage insulation tests shall be carried out in accordance with IEC 56-4 Chapter 3 Part 4.

### **Motion Analysis**

All the circuit breakers shall be having their mechanisms shaft rotation tested and recorded. A complete report of all the tests performed shall be submitted to the Engineer as soon as the tests are carried out. These results shall be included in the manuals for future reference.

### **Site Tests**

Unless specifically called for, the circuit breakers need not be high-voltage tested at site. All commissioning tests including primary injection tests are required. A complete test report of all commissioning tests shall be submitted to the Engineer as soon as the tests are complete and must be followed up by a neatly typed report for future reference.

### **Tests Certificates**

Single copies of all type test certificates shall be submitted as soon as possible, but not later than the delivery date of the circuit breakers.

The manufacturer shall guarantee, in the Schedules, the maximum value of over-voltage factor for the specific conditions detailed in the detailed Specification. In addition the manufacturer shall state the number of major re-strikes that will occur when dropping the unloaded lines specified in the detailed specification. A major re-strike shall be defined as a flow of current occurring later than 90 electrical degrees after a current zero following contact separation.

### **Witnessing of Tests**

The Engineer reserves the right to appoint a representative to inspect the circuit breakers at any stage of manufacture or to be present at any of the tests specified. The Contractor must offer the equipment for inspection before dispatch.

### **8.3.12. Site Conditions and Enclosures**

The circuit breakers will be exposed to the climatic conditions specified. Circuit breaker parts requiring lubrication shall be housed in vermin-, dust- and weatherproof enclosures.

All door hinges, fasteners, handles, etc., on enclosures shall be made of non-rusting material. Gasket materials shall be of the neoprene or foam-plastic type. Felt or rubber gaskets will not be acceptable. Suitable ventilation holes shall be provided to allow a free circulation of air within enclosures and so reduce the likelihood of condensation.

The holes shall be so shaped as to prevent the ingress of dust and moisture falling at any angle between the vertical and 90° to the vertical and shall have internal brass or copper gauze coverings with holes not exceeding 7mm<sup>2</sup> in area, to exclude insects. At least one, gauze covered

drain hole, with a minimum diameter of 25mm, shall be positioned at the lowest point of an enclosure. This drain hole shall not have an internal rim or ledge liable to obstruct drainage.

In addition to the above, circuit breaker mechanism boxes and similar cubicles shall have hinged doors allowing clear access to all parts requiring maintenance, adjustment or alteration. Cubicles not integral with circuit breakers shall be suitable for structure mounting and all cubicles shall allow cable or pipe entry from yard trenches.

### **8.3.13. Control Supplies**

Because separate protection is normally adopted for each of the closing-, signal-, and trip circuits, these circuits shall not be connected together in the circuit breaker.

### **8.3.14. Closing Devices**

All electrically operated closing devices shall be suitable for operation at any voltage between 80% and 120% of the nominal control voltage measured at the device terminals.

### **8.3.15. Tripping Devices**

All electrical tripping devices shall be suitable for operation at any voltage between 80% and 120% of the nominal voltage, measured at the device terminals.

The tripping devices of a circuit breaker, when the circuit breaker is not carrying current, shall be capable of operating satisfactorily down to 50% of the nominal auxiliary supply voltage measured at the device terminals.

To ensure the operation of breaker trip coils with faulty or dirty breaker auxiliary contacts, two in parallel shall be included in all tripping circuits.

Each circuit breaker shall be equipped with one shunt trip system per mechanism. If specified, an additional shunt trip system shall be provided which shall be electrically separate from the first.

An emergency hand-tripping device shall be located in the local operating cubicle of each circuit breaker.

### **8.3.16. Anti-pumping**

All circuit breakers shall be provided with means to prevent pumping while the closing circuit remains energised should the breaker either fail to latch, or be tripped during closing due to the operation of the protective relays. Any relays to accomplish this shall be continuously rated.

### **8.3.17. Interlocking**

Oil circuit breakers having two or more series breaks per phase shall be mechanically and/or pneumatically interlocked to ensure that all breaks operate simultaneously.

### **8.3.18. Circuit-Breaker Handling and Maintenance Equipment**

Approved portable equipment shall be provided which will enable normal maintenance of each circuit breaker to be carried out with the minimum time and labour. The equipment may comprise portable ladders, platforms and fixed or portable lifting tackle. All special tools



necessary for the maintenance of the switchgear shall be supplied complete with a wall-mounted cabinet of matching colour with the control panels. The tool cabinet shall be mounted in an approved position inside the substation building.

#### **8.3.19. Drawings**

The following drawings shall be submitted with each Tender:

1. Outline and general arrangements drawings showing the main overall dimensions.
2. Detailed drawings of the circuit breaker together with its operating mechanism.

#### **8.3.20. Taking over and maintenance**

The circuit breaker will be accepted and taken over when it has been satisfactorily put into operation or within one month of it being ready to be put into operation, whichever is the earlier.

#### **8.3.21. Spares**

The Contractor need to specify the recommended spare parts required.

#### **8.3.22. Spares availability and agencies**

Contractors shall indicate in their Tender whether they are the accredited agents or manufacturers of the equipment offered. If not, they shall state the name of the accredited agent in the area where the switchgear is installed.

Contractors shall also furnish details of service facilities available in the area.

#### **8.3.23. Guarantee**

Units shall be guaranteed against faulty material and workmanship for a period of 12 months measured from the date of commissioning.

#### **8.3.24. Refurbishment**

Where breakers are required to be refurbished, they shall be returned to their original design state.

#### **8.3.25. Bushings**

All bushings shall be of the outdoor type and shall comply with the specifications as listed.

Bushing or insulators of similar design and size shall be interchangeable.

The total creepage distance to earth and, where applicable across the open break of a circuit breaker, shall be not less than specified in the detailed specification.

#### **8.3.26. Earthing**

All metal parts other than those forming part of any electrical circuit shall be attached in an approved manner to the earthing system. The Contractor shall provide all necessary terminals, required for this purpose, on any part of the equipment.

