



## NEC3 Engineering & Construction Contract

**Between ESKOM HOLDINGS SOC Ltd  
(Reg No. 2002/015527/30)**

**and [Insert at award stage]  
(Reg No. \_\_\_\_\_ )**

**for FS-STM-1905-331031-0002 Welbedacht Dam - Van  
Stadensrust 11 kV Capacitor Bank (C.DO03374)**

**FS-STM-1905-331031-0003 Driedorp Boesmanskop  
22kV line to Workshop Substation (C.DO03444)**

**FS-STM-1905-33103-0004 Koria 11kV line from  
Workshop  
Substation (C.DO03445)**

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**CONTRACT No. [Insert at award stage]**

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## Part C1: Agreements & Contract Data

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[to be inserted from Returnable Documents at award stage]	
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## C1.1 Form of Offer & Acceptance

### 1.1. Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

**FS-STM-1905-331031-0002 Welbedacht Dam - Van Stadensrust 11 kV Capacitor Bank (C.DO03374)**

**FS-STM-1905-331031-0003 Driedorp Boesmanskop 22kV line to Workshop Substation (C.DO03444)**

**FS-STM-1905-33103-0004 Koria 11kV line from Workshop Substation (C.DO03445)**

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

Options B	The offered total of the Prices exclusive of VAT is	R
	Sub total	R
	Value Added Tax @ 15% is	R
	The offered total of the amount due inclusive of VAT is <sup>1</sup>	R
	(in words) [●]	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the  
tenderer:**

<sup>1</sup> This total is required by the *Employer* for budgeting purposes only. Actual amounts due will be assessed in terms of the *conditions of contract*.

(Insert name and address of organisation)

Name &  
signature of  
witness

Date

Tenderer's CIDB registration number (if applicable)

## 2.1. Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the Employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy signed between them of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

for the  
Employer

(Insert name and address of organisation)

Name & signature of witness	_____	Date	_____
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Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

## 2.2. Schedule of Deviations to be completed by the *Employer* prior to contract award

Note:

1. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1	[•]	[•]
2	[•]	[•]
3	[•]	[•]
4	[•]	[•]
5	[•]	[•]
6	[•]	[•]
7	[•]	[•]

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

### 2.2.1.1.For the tenderer:

### 2.2.1.2.For the Employer

Signature	_____	_____
Name	_____	_____
Capacity	_____	_____
On behalf of	(Insert name and address of organisation)	(Insert name and address of organisation)
Name & signature of witness	_____	_____
Date	_____	_____

## C1.2 ECC3 Contract Data

### 3. Part one - Data provided by the *Employer*

[Instructions to the contract compiler: (delete these two notes in the final draft of a contract)]

1. Please read the relevant clauses in the conditions of contract before you enter data. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data.
1. Some ECC3 options are always selected by Eskom Holdings SOC Ltd. The remaining ECC3 options are identified by shading in the left hand column. In the event that the option is not required select and delete the whole row. Where the following symbol is used "[●]" - data is required to be inserted relevant to the specific option selected.]

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

3.1. Statement	3.2. Data
3.3. General	3.4.
The <i>conditions of contract</i> are the core clauses and the clauses for main Option  dispute resolution Option and secondary Options	B: Priced contract with bill of quantities
	W1: Dispute resolution procedure
	X1: CPA adjustment
	X2: Changes in the law
	X5: Sectional completion
	X7: Delay damages
	X16: Retention
	X18: Limitation of liability
	Z: <i>Additional conditions of contract</i>
of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
The <i>Employer</i> is (Name):	Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa
Address	Registered office at Megawatt Park, Maxwell

**Drive, Sandton, Johannesburg**

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The *Project Manager* is: (Name)

Address

Tel

Fax

e-mail

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The *Supervisor* is: (Name)

Address [•]

Tel No. [•]

Fax No. [•]

e-mail [•]

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The *works* are

**FS-STM-1905-331031-0002 Welbedacht Dam - Van Stadensrust 11 kV Capacitor Bank (C.DO03374)**

**FS-STM-1905-331031-0003 Driedorp Boesmanskop 22kV line to Workshop Substation (C.DO03444)**

**FS-STM-1905-33103-0004 Koria 11kV line from Workshop Substation (C.DO03445)**

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The following matters will be included in the Risk Register

- **Community Unrest**
  - **Outage unavailability**
  - **Adverse Weather (Rain, Wind, Hailstorm, Heatwave)**
  - **Earthworks planning needs to take into consideration the rain.**
  - **Security equipment, materials and resources**
  - **Electrocution**
  - **Dehydration (Hot Weather Conditions)**
  - **Fire and Smoke**
  - **Snakes, Monkeys, and other animals**
  - **Normal construction hazards for Mechanical work**
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The *boundaries of the site* are **Free State Operating Unit**

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The Site Information is in **Part 4: Site Information**

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The Works Information is in **Part 3: Scope of Work and all documents and drawings to which it makes reference.**

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The <i>law of the contract</i> is the law of	the Republic of South Africa		
The <i>language of this contract</i> is	English		
The <i>period for reply</i> is	1 week (5 Working days)		
<b>3.5. The <i>Contractor's</i> main responsibilities</b>	Data required by this section of the core clauses is provided by the <i>Contractor</i> in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.		
<b>3.6. Time</b>	<b>3.7.</b>		
The <i>completion date</i> for the whole of the works is	As per the agreed baseline programme. Agreed at site handover meeting		
The <i>key dates</i> and the <i>conditions</i> to be met are:	<b>Condition to be met</b>		<b>key date</b>
	1	As per Scope of work, Execution plans and outage dates arrangements	TBA
The <i>access dates</i> are:	<b>Part of the Site</b>		<b>Date</b>
	1	To be discussed with the project co-ordinator	TBA
	2	[•]	[•]
	3	[•]	[•]
The <i>Contractor</i> is to submit a first programme for acceptance within	One week of the contract date		
The <i>starting date</i> is	TBA		
The <i>Contractor</i> submits revised programmes at intervals no longer than	The period between project progress meetings		
The <i>Employer</i> is not willing to take over the works before the Completion Date.			
<b>3.8. Testing and Defects</b>	<b>3.9.</b>		
The <i>defects date</i> is	52 weeks/1 Year after Completion of the whole of the works.		
The <i>defect correction period</i> is	Within one week upon notification of defects		
except that the <i>defect correction period</i> for	Emergency is Twenty-Four (24) hours		
and the <i>defect correction period</i> for			
<b>3.10. Payment</b>	<b>3.11.</b>		
The <i>assessment interval</i> is	Between the 15 <sup>th</sup> and 20 <sup>th</sup> day of each successive month.		

The <i>currency of this contract</i> is the	<b>South African Rand.</b>
The period within which payments are made is	<b>30 Calendar days after valid tax invoice</b>
The <i>interest rate</i> is	<p>the publicly quoted prime rate of interest (calculated on a 365 day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands and</p> <p>(ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted <i>mutatis mutandis</i> every 6 months thereafter and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove.</p>
<b>3.12. Compensation events</b>	<b>3.13.</b>
The place where weather is to be recorded is:	<b>The contractor construction site camps and the closest Weather Bureau Station.</b>
The <i>weather measurements</i> to be recorded for each calendar month are,	<p><b>the cumulative rainfall (mm)</b></p> <p><b>the number of days with rainfall more than 10 mm</b></p> <p><b>the number of days with minimum air temperature less than 0 degrees Celsius</b></p> <p><b>the number of days with snow lying at 09:00 hours South African Time</b></p> <p><b>and these measurements:</b></p>
The <i>weather measurements</i> are supplied by	<b>South African Weather Services</b>
The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at:	<b>South African Weather Services</b>
and which are available from:	<b>the South African Weather Bureau and included in Annexure A to this Contract Data provided by the <i>Employer</i></b>
Assumed values for the ten year return	<b>As stated in Annexure A to this Contract Data</b>

<i>weather data</i> for each <i>weather measurement</i> for each calendar month are:	<b>provided by the <i>Employer</i>.</b>  <b>Note:</b> If this arrangement is used, delete the rows above for 60.1(13) and delete this note.
<b>3.14. Title</b>	<b>There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.</b>
<b>3.15. Risks and insurance</b>	<b>3.16.</b>
These are additional <i>Employer's</i> risks	1. unavailability of outages 2. excessive rainfall 3. Excessive wind
<b>3.17. Termination</b>	<b>As per terms and conditions of the NEC3 Engineering and Construction Contract, June 2005 (ECC3) (with amendments June 2006)</b>
<b>3.18. Data for main Option clause</b>	
<b>Priced contract with bill of quantities</b>	
The <i>method of measurement</i> is	<b>as stated in Part C2.1, Pricing Assumptions.</b>
<b>3.19. Data for Option W1</b>	
The <i>Adjudicator</i> is	<b>the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a>). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).</b>
Address	<b>[•]</b>
Tel No.	<b>[•]</b>
Fax No.	<b>[•]</b>
e-mail	<b>[•]</b>
The <i>Adjudicator nominating body</i> is:	<b>the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a> ) or its successor body.</b>
The <i>tribunal</i> is:	<b>arbitration.</b>
The <i>arbitration procedure</i> is	<b>the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor</b>

		body.		
The place where arbitration is to be held is		The city within which the Head Office for the relevant Operating unit is situated within South Africa		
The person or organisation who will choose an arbitrator		the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.		
<ul style="list-style-type: none"><li>- if the Parties cannot agree a choice or</li><li>- if the arbitration procedure does not state who selects an arbitrator, is</li></ul>				
3.20. Data for secondary Option clauses		3.21.		
Price adjustment for inflation		CPA Adjustment the rates will be fixed and firm for the first 12 months duration of the project, during second and third year of the project 15 % will be none-adjustable while 85% will be eligible for the escalations.		
The <i>base date</i> for indices is		Month before the tender closes		
The proportions used to calculate the Price Adjustment Factor are:		proportion	linked to index for	Index prepared by
		Labour rates 50%	Table C-3 Labour	SEIFSA
		Transport rates 20%	Table L-2 for road freights	SEIFSA
		Material rates 15%	Table G for PPI on electrical engineering	SEIFSA
		15%	non-adjustable	
Total		1.00		
Changes in the law		As per the terms and conditions of the NEC3 Engineering and Construction contract, June 2005 (ECC3) (with amendments June 2006)		
Sectional Completion		The completion date for each section of the works will be specified in the Task order/ project specific agreement for any project executed in terms of this contract.		
Delay Damages		The Delay damages for section of the will be specified in the task order/project specific agreement for any project executed in terms of this contract and will be relevant to the specific project being executed.		

<b>Retention (not used with Option F)</b>	
The <i>retention free amount</i> is	<b>R0.0 (zero Rand)</b>
The <i>retention percentage</i> is	<b>5% of the total of the Prices; applicable at each assessment of Price for Work Done to Date.</b>
<b>Limitation of liability</b>	
The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	<b>the sum of the loss as a result of any action arising by any negligent act by any person under the contractors employment or any person performing work under direct supervision of the contractor.</b>
For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	<b>The amount of the deductibles relevant to the event described in the insurance policy format.</b>
The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to	<p><b>The greater of</b></p> <ul style="list-style-type: none"> <li>• the total of the Prices at the Contract Date</li> </ul> <p><b>and</b></p> <ul style="list-style-type: none"> <li>• the amounts excluded and unrecoverable from the <i>Employer's</i> assets policy for correcting the Defect (other than the resulting physical damage which is not excluded) plus the applicable deductible as at contract date.</li> </ul>
The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	<p><b>the total of the Prices other than for the additional excluded matters.</b></p> <p><b>The <i>Contractor's</i> total liability for the additional excluded matters is not limited.</b></p> <p><b>The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for</b></p> <ul style="list-style-type: none"> <li>• Defects due to his design which arise before the Defects Certificate is issued,</li> <li>• Defects due to manufacture and fabrication outside the Site, <ul style="list-style-type: none"> <li>• loss of or damage to property (other than the <i>works</i>, Plant and Materials),</li> </ul> </li> <li>• death of or injury to a person and</li> <li>• infringement of an intellectual property right.</li> </ul>
The <i>end of liability date</i> is	<p><b>(i) Seven years after the <i>defects date</i> for latent Defects and</b></p> <p><b>(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.</b></p> <p><b>A latent Defect is a Defect which would not</b></p>

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have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period. If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.

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**The Additional conditions of contract are**

**Z1 to Z15 always apply.**

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**Change of Broad Based Black Economic Empowerment (B-BBEE) status**

Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor's* B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.

The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.

Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor's* obligation to Provide the Works.

Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

**Health, safety and the environment: Add to core clause 27.4**

The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*:

- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site;
- warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
- undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

**Z12 Ethics**

For the purposes of this Z-clause, the following definitions apply:

**Affected Party** means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's

employees, or any one or more of all of these parties' relatives or friends,

**Coercive Action** means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,

**Collusive Action** means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,

**Committing Party** means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,

**Corrupt Action** means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,

**Fraudulent Action** means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,

**Obstructive Action** means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and

**Prohibited Action** means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.

Z12.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z12.2 The *Employer* may terminate the *Contractor's* obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the *Employer* has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor's* obligation to Provide the Services for this reason.

Z12.3 If the *Employer* terminates the *Contractor's* obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.

Z12.4 A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.

## **Z13 Insurance**

### **Z 13.1 Replace core clause 84 with the following:**

#### **Insurance cover 84**

**84.1** When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.

**84.2** The *Contractor* provides the insurances stated in the Insurance Table A.

**84.3** The insurances provide cover for events which are at the *Contractor's* risk from the *starting date* until the earlier of Completion and the date of the termination certificate.

### 3.21.1. INSURANCE TABLE A

Insurance against	Minimum amount of cover or minimum limit of indemnity
Loss of or damage to the works, Plant and Materials	The replacement cost where not covered by the <i>Employer's</i> insurance  The <i>Employer's</i> policy deductible, as Contract Date, where covered by the <i>Employer's</i> insurance
Loss of or damage to Equipment	The replacement cost
Liability for loss of or damage to property (except the works, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the <i>Contractor</i> ) caused by activity in connection with this contract	<b><u>Loss of or damage to property</u></b> <b><u>Employer's property</u></b> The replacement cost where not covered by the <i>Employer's</i> insurance  The <i>Employer's</i> policy deductible, as Contract Date, where covered by the <i>Employer's</i> insurance  <b><u>Other property</u></b> The replacement cost  <b><u>Bodily injury to or death of a person</u></b> The amount required by applicable law
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law

#### Z 13.2

#### Replace core clause 87 with the following:

The *Employer* provides the insurances stated in the Insurance Table B.

### INSURANCE TABLE B

Insurance against or name of policy	Minimum amount of cover or minimum limit of indemnity
Assets All Risk	Per the insurance policy document
Contract Works insurance	Per the insurance policy document
Environmental Liability	Per the insurance policy document
General and Public Liability	Per the insurance policy document
Transportation (Marine)	Per the insurance policy document
Motor Fleet and Mobile Plant	Per the insurance policy document
Terrorism	Per the insurance policy document
Cyber Liability	Per the insurance policy document
Nuclear Material Damage and Business Interruption	Per the insurance policy document



Nuclear Material Damage Terrorism	Per the insurance policy document
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## **Z14 Nuclear Liability**

- Z14.1 The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.
- Z14.2 The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 47 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.
- Z14.3 Subject to clause Z14.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.
- Z14.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 47 of 1999, or any replacement section dealing with the same subject matter.
- Z14.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

## **Z15 Asbestos**

For the purposes of this Z-clause, the following definitions apply:

<b>AAIA</b>	means approved asbestos inspection authority.
<b>ACM</b>	means asbestos containing materials.
<b>AL</b>	means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL.
<b>Ambient Air</b>	means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.
<b>Compliance Monitoring</b>	means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.
<b>OEL</b>	means occupational exposure limit.
<b>Parallel Measurements</b>	means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.
<b>Safe Levels</b>	means airborne asbestos exposure levels conforming to the Standard's

requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

**Standard** means the *Employer's* Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.

**SANAS** means the South African National Accreditation System.

**TWA** means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

Z15.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

Z15.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor's* expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z15.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z15.3 The *Employer* manages asbestos and ACM according to the Standard.

Z15.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented and relevant air monitoring conducted in order to declare the area safe.

Z15.5 The *Contractor's* personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

Z15.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.

Z15.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer's* expense, and conducted in line with South African legislation.

#### 4. Annexure A: One-in-ten-year-return *weather data* obtained from SA Weather Bureau for [weather station]

If any one of these *weather measurements* recorded within a calendar month, before the Completion Date for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the amount stated below then the *Contractor* may notify a compensation event.

	<i>Weather measurement</i>				
Month	Cumulative rainfall (mm)	Number of days with rain more than 10mm	Number of days with min air temp < 0 deg.C	Number of days with snow lying at 08:00 CAT	[Other measurements if applicable]
January	[•]	[•]	[•]	[•]	
February	[•]	[•]	[•]	[•]	
March	[•]	[•]	[•]	[•]	
April	[•]	[•]	[•]	[•]	
May	[•]	[•]	[•]	[•]	
June	[•]	[•]	[•]	[•]	
July	[•]	[•]	[•]	[•]	
August	[•]	[•]	[•]	[•]	
September	[•]	[•]	[•]	[•]	
October	[•]	[•]	[•]	[•]	
November	[•]	[•]	[•]	[•]	
December	[•]	[•]	[•]	[•]	

Only the difference between the more adverse recorded weather and the equivalent measurement given above is taken into account in assessing a compensation event.

## C1.2 Contract Data

### 5. Part two - Data provided by the *Contractor*

**[Instructions to the contract compiler: (delete this notes before issue to tenderers with an enquiry)**

Whenever a cell is shaded in the left hand column it denotes this data is optional. If not required select and delete the whole row, otherwise insert the required Data.]

#### Notes to a tendering contractor:

1. Please read both the NEC3 Engineering and Construction Contract (April 2013) and the relevant parts of its Guidance Notes (ECC3-GN)<sup>2</sup> in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 (April 2013) Guidance Notes.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data
3. Where a form field like this [ ] appears, data is required to be inserted relevant to the option selected. Click on the form field **once** and type in the data. Otherwise complete by hand and in ink.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

5.1.	5.2. Statement	5.3. Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	% %
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job	

<sup>2</sup> Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see [www.ecs.co.za](http://www.ecs.co.za)

	<p>Responsibilities:</p> <p>Qualifications:</p> <p>Experience:</p>	<p>CV's (and further key persons data including CVs) are appended to Tender Schedule entitled _____.</p>		
11.2(3)	The <i>completion date</i> for the whole of the works is			
11.2(14)	The following matters will be included in the Risk Register			
11.2(19)	The Works Information for the <i>Contractor's</i> design is in:			
31.1	The programme identified in the Contract Data is			
<b>B</b>	<b>Priced contract with bill of quantities</b>			
11.2(21)	The <i>bill of quantities</i> is in	<p>(in figures)</p> <p>(in words), excluding VAT</p>		
11.2(31)	The tendered total of the Prices is			
<b>B</b>	<b>Priced contract with bill of quantities</b>	<b>Data for the Shorter Schedule of Cost Components</b>		
41 in SSCC	The percentage for people overheads is:	%		
21 in SSCC	<p>The published list of Equipment is the last edition of the list published by</p> <p>The percentage for adjustment for Equipment in the published list is</p>	<p>Minus %</p>		
22 in SSCC	The rates of other Equipment are:	Equipment	Size or capacity	Rate
61 in SSCC	<p>The hourly rates for Defined Cost of design outside the Working Areas are</p> <p><b>Note:</b> Hourly rates are estimated 'cost to company of the employee' and not selling rates.</p> <p>Please insert another schedule if foreign resources may also be used</p>	Category of employee	Hourly rate	

62 in SSCC	The percentage for design overheads is	%
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:	
	<b>Please insert another schedule if foreign resources may also be used</b>	
52 in SCC	The percentage for manufacture and fabrication overheads is	%

## C1.3 Forms of Securities

### Pro forma for Bonds & Guarantees

#### NOT APPLICABLE FOR THIS CONTRACT

For use with the NEC3 Engineering & Construction Contract

Option X16: Retention (not used with Option F)

The *Contractor* shall guarantee his ASGI-SA Obligations by providing the *Employer* with an ASGI-SA Guarantee in the form provided here.

***[Note to contract compiler: If there are no ASGI-SA Obligations in this contract, delete the above statement]***

The organisation providing the bond / guarantee does so by copying the pro forma document onto his letterhead without any change to the text or format and completing the required details. The completed document is then given to the *Employer* within the time stated in the contract.

**PART 2: PRICING DATA**  
**ECC3 Option B**

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option B	
C2.2	The <i>bill of quantities</i>	



## C2.1 Pricing assumptions: Option B

### 1. How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract (ECC3) Option B states:

<b>Identified and defined terms</b>	11	
	11.2	(21) The Bill of Quantities is the <i>bill of quantities</i> as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.
		(28) The Price for Work Done to Date is the total of  the quantity of the work which the <i>Contractor</i> has completed for each item in the Bill of Quantities multiplied by the rate and a proportion of each lump sum which is the proportion of the work covered by the item which the <i>Contractor</i> has completed.  Completed work is work without Defects which would either delay or be covered by immediately following work.
		(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

### 2. Function of the Bill of Quantities

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

### 3. Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

There is no general provision in Option B for payment for materials on Site before incorporation into the *works*. If secondary Option X14 Advanced payment has not been used then the tendering contractor may obtain the same effect by inserting appropriate items in the method related charges where the *method of measurement* allows, or alternatively making allowance in the rates of the *bill of quantities* for the financing of Plant and Materials until they are incorporated in the *works*.

When compensation events arise, the default position is that the Bill of Quantities is not used to calculate the cost effect of the event. Defined Cost and the resulting Fee is used and Defined Cost includes all components of cost which the *Contractor* is likely to incur, including so called P & G items. Rates and lump sums from the Bill of Quantities, or from any other source, may be used instead of Defined Cost and the Fee only if the *Contractor* and *Project Manager* agree. If they are unable to agree, then Defined Cost plus Fee is used.

## 4. Measurement and payment

### 4.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

Abbreviation	Unit
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
l	litre
m	metre
mm	millimetre
m <sup>2</sup>	square metre
m <sup>2</sup> -pass	square metre pass
m <sup>3</sup>	cubic metre
m <sup>3</sup> -km	cubic metre-kilometre
MN	meganewton
MN.m	meganewton-metre
MPa	megapascal
No.	number
sum	Lump sum
t	tonne (1000kg)

### 4.2. General assumptions

- 4.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.
- 4.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.
- 4.2.3. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*.
- 4.2.4. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due.
- 4.2.5. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. Detail regarding the extent of the work entailed under each item is provided in the Works Information.

### 4.3. Departures from the *method of measurement*

#### **4.4. Amplification of or assumptions about measurement items**

The following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.

## C2.2 the *bill of quantities*



BOQ Korial 11KV  
line.xlsx



BOQ Cap Bank.xlsx



BOQ BOESMANKOP  
22KV LINES.xlsx

## PART 3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
C3.1	<i>Employer's Works Information</i>	2
C3.2	<i>Contractor's Works Information</i>	0
Total number of pages		3

## PROJECT WORKS INFORMATION

***Part 1 Project Works Information***

***Part 2 Project Specifications***

***Part 3 Project Critical Tasks***

***Part 4 Project Risk Analysis***

***Part 5 Site Information***

***Part 6 Stringing charts***

***Part 7 ENS Diagrams***

***Part 8 GPS Coordinates***

***Part 9 Environmental Document***

***Part 10 Health and Safety Requirements***

***Part 11 Structure & Construction Drawings***

***Part 12 Control Plant Desi***

### **3 Project Works Information:**

#### **3.1 Description of the works**

The Works should be executed in total to Employer's discretion, as per designs and in accordance with the relevant specifications and Employer standards.

##### **3.1.1 GENERAL**

- **Construct new three phase Fox line from DBK t-off to the newly proposed 22/11kV Workshop Substation.**
- **Build another Fox line from the load side of the Substation to the WSR pick up point.**
- **Install new pole mounted reclosers outside the Substation on the 22 and 11kV side.**
- **Install new CT/VT unit on the 11kV side after the closer.**
- Supply Employer approved material (as listed in paragraph 1.17.3) and collect Employer supplied material (listed in paragraph 1.17.2) from stores.
  - Construct MV, LV and House connections as per the attached design drawings and specifications.
- The material listed in paragraph 1.17.3 is an estimation of the quantities and materials the contractor should provide. It is the contractor's responsibility to ensure the accuracy of this material.
  - No compensation will be allowed should the BOM as listed be incorrect.
- All material will comply with Eskom standards as per Eskom Distribution Standards, Part 9. All conductors will be Eskom marked.

#### **3.2 Work to be performed by the Contractor for the works**

##### **3.2.1 Scope of Works**

Preliminary, General Costs and Site Establishment

##### **Site Establishment**

###### **3.2.1.1 Contractor's Yard Fencing**

The cost to the Contractor to make provision for and to erect, alter as necessary, maintain, remove and make good on completion of the Works suitable fencing with access gates, etc as necessary for the enclosure of the contractor's yard, all to the satisfaction of the Employer's Representative. If other suitable and safe storage facilities have already been provided, this item need not be priced.

###### **3.2.1.2 Contractor's insurance (insurance payments, provide certificates)**

The cost to the Contractor to make provision to pay all deductibles (excesses) for the risks that he may encounter during the execution of the Works, further explained in the Contract document.

###### **3.2.1.3 Site Offices (establish & maintain)**

Cost to the Contractor to make provision for a site office, suitable for regular site meetings, which must also serve as the office for the Contractor's site supervisor. Adequate workspace must also be provided for the Project Manager or his Representative, as well as a place of safekeeping for his site plans and documentation.

###### **3.2.1.4 Site Stores (establish & maintain for safe keeping of the materials)**

Cost to the Contractor to make provision for the safe storage of material on site against theft as well as protection against damage due to wind or weather.

###### **3.2.1.5 Accommodation of Employees**

Cost to the Contractor to make provision for accommodation for his employees that are working on a site which is not close to their home base for an extended period

###### **3.2.1.6 Contractor's Plant, Equipment & Tools (establish, maintain and remove)**

The cost to the Contractor to make provision for the necessary Plant, Equipment and Tools for the execution of the Works, maintain it in a proper and safe working condition and remove on Completion.

#### **3.2.1.7 Sanitary Facilities**

The cost to the Contractor to make provision for and maintain in a thoroughly clean and tidy condition and remove on completion of the Works, proper toilets for the use of the workmen

#### **3.2.1.8 Water Supplies**

The cost to the Contractor to make provision for all water necessary for the execution of the Works, including all temporary plumbing, removing same and making good on completion of the Works. Portable drinking water should also be made available for the workmen.

#### **3.2.1.9 Electricity Supplies**

The cost to the Contractor to make provision for all electricity and artificial lighting necessary for the execution of the Works, including all temporary installation work, removing same and making good on completion of the Works.

#### **3.2.1.10 Communications (telephones, e-mail, faxes)**

The cost to the Contractor to make provision and to maintain a proper telephone or cell phone communication system as well as an e-mail and a fax facility until completion of the Works.

#### **3.2.1.11 Security (24 hours)**

Cost to the Contractor to make provision for all appropriate measures for the general security of the Works.

#### **3.2.1.12 Setting out the Works.**

Cost to the Contractor to provide templates, jigs, instruments (dumpy levels) etc. and to set out lines and levels for excavations, concrete plinths, buildings, structures, fencing, drainage, etc, if required.

#### **3.2.1.13 Management & Programme for the works (appointment of a Supervisor) (Compulsory to list the name of supervisor for the duration of contract in part 3, paragraph 4.)**

The cost to the Contractor to make provision for the employment of a competent supervisor to supervise and manage the execution of the Works as well as to prepare a detailed programme and supporting documentation for the execution of the contract including the work of all approved subcontractors engaged by Employer, representing the information that is required by the Works Information in sufficient detail to enable the Employer's Representative to assess the progress of the works at all times in comparison with the programme.

### **3.3. Health & Safety (OHS Act, Construction Regulations and Eskom Safety Specifications)**

#### **3.3.1 Personal protective equipment:**

Cost to the Contractor to make provision to replace PPE only when required and not to purchase new PPE for each project. Only the PPE required for the risks exposed to during the Contract period should be priced. Typical PPE (Hard hats, Safety goggles or shields, Respirators, Gloves, Safety shoes, Overalls, Fall Arrest Systems, Testing of equipment.

#### **3.3.2 Compliance with safety plan & safety file**

The cost to the Contractor to make provision to comply with the list of requirements to draw up a H & S plan for the project and compile and maintain a H & S File.

### **3.3.3 Health & Safety Training**

The cost to the Contractor to make provision for H&S training as well as the cost of the idle (unproductive) time of his employees whilst undergoing H & S training

### **3.3.4 Legal appointments in terms of the OHS Act and Regulations**

The cost to the Contractor to make provision for the appointees in terms of the OHS Act and Regulations i. e., qualified first aider, construction site Health and safety officer, incident / Accident investigator, if not part of the construction teams of the Contractor, and appointed full time for this purpose. The additional cost of their employment which cannot be recovered through contract rates, should be allowed here.

### **3.3.5 Other Health and Safety items deemed necessary to comply to OHS Act, Regulations and Eskom Safety specifications**

The cost to the Contractor to make provision for the cost to comply to any other requirement of the OHS Act, i.e., to notify the Department of Labour of the Construction project, time and cost to do and record daily Risk assessments, taking responsibility of Sub Contractors' compliance in terms of the OHS Act (Safety Plan and File), constant updating of the Health and Safety File, etc.

### **3.3.6 Provision of Standards and Specifications**

The cost to the Contractor to obtain Standards and Specifications that are referred to in this Contract document but are not supplied in hard copy format by Eskom.

### **3.3.7 Special transport of workers to, at and from site i. t. o. OHS Act. (Provide Registration No. of Vehicle that will be used. If hired provide copy of contract as part of returnable for tender)**

The cost to the Contractor to provide safe transport to his employees at, to and from the construction site in terms of the Construction Regulations Clause 21 (2) (a) and (i)

## **3.4 Environmental Management**

### **Compliance with environmental legislation as well as environmental specifications included in or referred to in this document.**

The cost to the Contractor to obtain permits should it become necessary to cut a protected tree, ensure that waste is disposed of on a permitted, legal waste site and all relevant costs payable to dumping site.

### **3.4.1 General**

#### **3.4.1.1 Completion and submission of the Expanded Public Works Programme Report**

The cost to the *Contractor* to complete the report (one page) attached to this Contract document and submitted to the *Project Manager* upon completion of Electrification, Sub-transmission and Refurbishment projects and with each invoice for Minor Reticulation projects.

#### **3.4.1.2 Provide for the repair to damaged water reticulation pipes**

Projected cost to the Contractor of repairing damaged water reticulation and/or other underground services that were not indicated on drawings or which a superficial search by the Contractor, did not reveal.

#### **3.4.1.3 Collecting, updating and processing of CC&B information on site**

The cost of employment of a person(s) to collect, update and to process the Customer (CC&B) Data on site only if required

#### **3.4.1.4 Numbering of houses on site as per Employer FSOU standard**

- The cost to the Contractor to supply and fix in position the house number as per the Employer's standard.
- 100 x 240mm x 0,6mm Yellow Chromadec plate with two pre-drilled 6 mm holes (rust-free metal).



- Fixed with two 6mm x 75mm nylon anchor or 6mm Zink bolt and 2x nuts.
- All corners rounded.
- Clear powder coat finish.
- Cast vinyl with 75mm Helvetica Compact script.

**3.4.1.5 Items deemed necessary for the completion of this Assessment Stage (must be specified and listed in Price list, under Site Establishment. If not, the cost will not be considered by Employer as part of the "Prices".)**

Any other cost or contingency identified by the Contractor which is not covered in the Site Establishment and could have a cost implication to the Contractor, must be specified to warrant inclusion in the Price Schedule.

**Notes:**

- The Contractor is referred to the contract documents for the full intent and meaning of each clause or item. He shall allow opposite each clause or item herein contained whatever payments he may consider necessary for the carrying out and observance of such item.
- The Contractor shall price the Preliminaries and General Activities, in respect of all payments required for any item of work, risk, contingency or obligation, whatsoever that is not described in the Activity Schedule and which is the responsibility of the Contractor under the contract.
- The Contractor shall, when requested by Employer, make available to Employer the detailed breakdown of each priced item in Activity Stage 1: Preliminaries and General.
- In the event of the Contractor not pricing the items of the Preliminaries and General Activities in sufficient detail, the Employer reserves the right to exercise it's own discretion in the apportionment to individual items of the total Preliminary and General prices within the contract documents.

### **3.5 MV Distribution**

**FS-STM-1905-331031-0002 Welbedacht Dam - Van Stadensrust 11 kV Capacitor Bank Installation of new Cap Bank and relocation of an existing Votage Regulator**

- Erect new strain structure between WSR 200-31 and WSR 200-32 and install new switched on 0.9MVar capacitor bank (as per D-DT 1747,1832 & 1849 and use 11m pole with 200mm pole top diameter)
- Relocate the existing voltage regulator from WSR 124 to a new position between WSR29 and WSR30.
- Voltage regulator to be supported on 10m poles with 200mm pole top diameter as per D-DT 1833 (out-of-line structure).

**FS-STM-1905-331031-0003 Driedorp Boesmanskop 22kV line to Workshop Substation New 22kV Fox line from DBK feeder to the new Substation**

- Create new tee-off at DBK 360-8 and build new Fox line approximately 3.7km to the new Workshop Substation (as per D-DT 1743, 1747, 1746, 1763, 1764, 1804,1870 & 1873).
- Install a new recloser on the closing span (DBK 360-43) in front of the Substation (as per D-FS 15735,1847,1763 &1852).
- Recloser to be installed on an H-pole using 12m poles with 180mm pole top diameters.
- The line should constructed with poles of 160mm pole top diameters and 13m poles should be used on the railway crossing.
- Label all MV poles as indicated on the spanning sheets.
- Pegging of ALL poles to be done by Eskom surveyor before construction of the project.
- Any deviation from construction drawing should be done in consultation with the relevant PE.

**FS-STM-1905-33103-0004 Korla 11kV line from Workshop Substation New 11kV Fox line from the Substation to pick up portion WSR feeder**

- The name of the new 11kV feeder from the Sub is Workshop Korla (WKR).

- Build new Fox line approximately 410m from the Sub to pick portion of WSR line at WSR 200-86-68-50.(as per D-DT 1746,1763,1764 &1870).
- Install new recloser at WKR 1 and CT/VT unit at WKR 2 outside of the Substation (as per D-FS 15735,1841, 1847,1763 &1852).
- Recloser to be installed on an H-pole using 12m poles with 180mm pole top diameters
- CT/VT unit to be installed on an H-pole using 11m poles with 180mm pole top diameters
- Create normally open (N/O) point at WSR 200-72.
- Label all MV poles as indicated on the spanning sheets.
- Pegging of ALL poles to be done by an Eskom surveyor before construction of the project.
- Any deviation from spanning sheets should be done in consultation with the relevant PE.

The Eskom DISTRIBUTION STANDARDS Parts 4 and 22 as well as specific requirements applicable to the Free State OU web site (Technology and Quality) forms the basis on which the Contractor has to construct the works.

### MV FOCUS AREAS TO BE APPLIED WHERE APPLICABLE

- a) Pistol grip straining clamps to be fitted at all road crossings (proclaimed roads)
- b) Angle to be done by using 2,5m wooden cross-arms, D-DT 1746 and T-off 1804. (Vertical angles will not be accepted, accept when motivated and approved). All MV feeders through towns will be constructed with the 2m steel cross arms, bird friendly (D-DT 1870B etc.)
- c) Ensure that struts (D-DT 0351) and stay rods are planted according to the correct depth and not bended (DDT0350). **No struts or stays to be planted inside a stand except for on the boundary. Stays or struts not to block access to the stand e.g. inside existing drive ways or gates.**
- d) Ensure stays, poles and struts are compacted.
- e) Ensure dead ends are fitted with a regulating eye tool. The contractor must have this tool as part of his equipment on site.
- f) **PG clamps to be used on all non-tension joints and fitted according to manufacturer requirements?**
- g) No BIL down wires to be fitted on any structures inside towns.
- h) Cross arms (take-offs) (rural lines) fitted to an existing or new pole with a BIL down wire must not be bonded and the BIL wire not to be removed
- i) Barbed wire to be used as anti-climbing device and installed at all positions as stipulated in technical bulletins 05TI-09 and 03TB-08. Danger signs as per specifications will be installed on all strut poles and poles with equipment.
- j) Ensure that the clearances in game reserves / farms adhere to the minimum height as stipulated in the Technical Bulletin 04TB-27
- k) Discrepancies between any of the Construction Drawings, Employer's DDT Drawings, Spanning sheets, Bill of Materials and Specifications will be brought immediately to the attention of the Project Engineer via the Project Co-ordinator. **Feeder lines will be surveyed by Employer. All internal survey (MV & LV) will be done by the contractor.** The contractor to survey according to the approved SG plan **AND NOT ACCORDING TO THE YARD FENCES ON SITE. The MV ASCII file to be completed by Employer Survey and the contractor to arrange for this to be done via the COW once pegged.** PM to ensure that Employer survey is involved and aware of the project prior to the construction of the project. The contractor to ensure that the networks surveyed adhere to the following requirements:
  - Clearances between conductors and ground, houses/dwellings, vegetation, Telkom etc. are according to the Employer minimum requirements
  - Ensure that lines do not cross graveyards, soccer fields etc.
  - Applications were done for rail and road crossings in conjunction with the Employer survey department prior to construction.
  -

The Contractor may not change routes that will influence voltage drops, have an influence on the costs or the practical operation and maintenance of the electrical network. If areas of uncertainty exist, the Engineer will be contacted immediately.

- l) No trees will be trimmed or totally cut without the permission from the Landowner and in rural areas from the Local Leader. Trees that are legally protected may only be cut with a permit. The Contractor to ensure that these permits are in place before any trees is cut.

- m) The following are general construction related aspects and will take preference to any other drawing and / or specification.

All conductors will be tensioned according to Technical Bulletin 02TB-034 and Tension Charts provided. The following steps will be followed:

- A calibrated Dynamometer, Thermometer and calculation material will be used.
- Measure the distances between strain points.
- Calculate the equivalent span length according to the following formula:  

$$Leq = \frac{L_1^3 + L_2^3 + L_3^3 + \dots}{L_1 + L_2 + L_3 + \dots}$$

Where:

Leq: Equivalent Span Length

L1, L2 etc: Intermediate Span Lengths between Strain Points

- Read the relevant Tension from the Sag and Tension charts using the conductor temperature and equivalent span length.
  - The phases will protrude above the top of the pole and cut in staggered lengths. All phases will be tensioned. The following data that will be handed to the Project Coordinator as part of the Handing Over Document:
  - Date, Span (between tension poles), Temperature, Equivalent Span Length, tension.
- n) All open excavations will be considered as dangerous. It will be clearly marked with danger tape that is at least 1 m from the edge of the excavation and at least 1m in height.
- o) All drilled holes to be treated with creosote.
- p) All incorrectly drilled holes in wood poles must be painted with creosote and plugged with dowels that fit the hole firmly. MV poles to be labelled according to the Works Procedure for Labelling of MV Overhead lines. DISPVWAA3 rev2 (latest revision).
- q) Cables to be installed in accordance with the following specifications: following are general construction related aspects and will take preference to any other drawing and / or specification.
- All cables to be installed in accordance with Employer Distribution Standards, Part 22. **All cables will be tested in accordance to the following Technical Instruction: 04TI-20 REVISION 0** Part 22: CABLES, COMMISSIONING TESTS FOR NEWLY INSTALLED MV, IV AND LV CABLES
  - Cables to be laid directly into the ground, D-DT-0854, latest revision.
  - Install warning tape, D-DT-8013, directly above the cable at a depth of 300 mm below ground level, (MV and LV and underground service cables).
  - Cables crossing runways or slipways to be installed to D-DT-8018.
  - Cable route markers, D-DT-8012, to be installed at each bend, road crossing and cable trench crossing. The base of the cable marker to be at a depth of 250 mm below natural ground level.
  - The following shall be punched onto the aluminium plate of the cable route marker:
    - an arrow indicating the cable route,
    - cable type and size,
    - the circuit number indicated on the electrical diagram.
- r) Jumpers to MV auxiliary equipment must adhere to Technical Bulletin 02TB 023.
- s) The Contractor must comply with Technical Instruction 02 TI 012 (latest) when the MV structure D-DT's 1743, 1744, 1746 & 1747 is constructed. Structure to be constructed in according to D-DT 0320, OPTION B.
- t)
- u) Poles, Stays & Struts planted in type 3 and 4 soils to be installed according to Technical Instruction 06TI-019, as well as Technical Bulletin 06TB-035, dated 15 January 2007.
- v) The contractor must have a cable car on site. Damaged MV conductor unrolled wrongly will be replaced at the contractor's cost. Empty cable drums must be returned to the stores by the contractor. Failure to comply will be for the contractor's account.
- w) Only the standard MV porcelain type stay insulator to be used. **The fibre glass rod type will not be accepted.**

- x) It is the Contractors responsibility to ensure that wooden poles delivered on site is stacked according to the required standard, DISPVABY3.
- y) The contractor to tender for normal soil or as specified by the Design Engineer in the Price List. The Contractor to provide a rate for all other soil types in Part 2: Type 4 (very soft soil), Type 3 (soft to firm), Type 2(very soft rock), Type 1 (soft rock) and Hard rock. The contractor will only be remunerated for the actual soil types on site. To claim for other soil types as tendered for the COW will have to confirm the soil types on site before closing the holes. No payments will be made if the before mentioned are not verified and confirmed by the appointed COW
- z) No transformers to be installed on corners and the designer to try and prevent any LV road crossings from the transformer structures.
- aa) **Stay wire to be made of at least 300mm below ground level and binded to the stay rod with 3 x cable ties, SAP no 0168521, 100mm apart or be cut beneath the stay thimble and as close to the thimble as possible. The stay wire not to be bended to prevent any injury to animal or human.**
- bb) **At the same time the NEC is handed to Procurement in order to issue tenders for the appointment of a contractor, Project Management must submit the Asset Disposal Office with a spreadsheet containing the details of the scrap materials that will be available for disposal and their decision regard the return of the materials to the RDC or the materials to be disposed from the construction site (Other method of disposal other than the mentioned methods needs first be discussed between Project Management and Asset Disposal and approval be obtained from the applicable authority (Tender Committee)**

### 3.6 LV DISTRIBUTION

Not Applicable

### 3.7 SERVICE CONNECTIONS

Not Applicable

### 3.8 AUXILIARY EQUIPMENT

- Install new recloser at WKR 1 and CT/VT unit at WKR 2 outside of the Substation (as per D-FS 15735,1841, 1847,1763 &1852) on the 11kVside.
- Install new recloser at DBK 360-43 outside of the Substation (as per D-FS 15735,1841, 1847,1763 &1852) on the 22kV side.
- Install new 0.9MVA switched capacitor bank between WSR 200-31 and WSR 200-32 as per D-DT 1832,1747 & 1849.
- Transformer Fuse elements will be supplied by the CNC. The contractor should inform the CNC at the beginning of the project of his requirements with reference to the fuse element ratings and quantities.
- All transformer bushing connections (MV & LV) to be done via lugs.

### 3.9 OTHERS

- Testing, commissioning, and handing over of networks to Employer as per Handing-Over Procedure, SCSASABZ1.
- Produce As-Built drawings of constructed networks and hand over to the Employer as per Eskom Standard, ESKPVAEG8.

### 3.10 Final Inspection, taking over of the Works and clearing site

- a) "As Built" drawings to be supplied at the final inspection according to the as built process ESKPVAEG8 (latest).

- b) During final inspection, the Project Manager or his representative will ensure that the quality control check sheets are completed and signed by all the interested and affected parties. Only after signing of this document, will the site be handed over for Commercial Operation. (See Eskom standard, SCSASABZ1 rev 1)
- c) Removal of site office and stores and discontinuation of services provided for the site office.
- d) Clearing of all rubble, waste, and rubbish, resulting from the construction activities, removal from site and reinstatement of terrain.
- e) Removal of all excess material (Copper, etc.) from site and returning of such material to the nearest Employer stores.
- f) All the parties concerned at the completion of the works, prior to the taking over of the works, will hold a final inspection.
- g) In the event of the Contractor not pricing the items of the Final Inspection and Taking Over of the Works Activities in sufficient detail, the Employer reserves the right to exercise its own discretion in the apportionment to individual items of the total Final Inspection and Taking Over of the Works prices within the contract documents.

### 3.11 Power Line Gates

- a) All work to be in strict accordance with TRMSCAAC1- Section 4.5, the Fencing Act No. 31 of 1963, SABS 675 and to detail servitude gate drawings D-FS-12051 All sheets & D-FS-13409 All sheets, latest revisions. Prior to the commencement of any other construction activities, the power line access gates shall be installed at all points where the power line crosses any fence in which there is no suitable gate within the extend of the power line way leave , unless otherwise indicated on the Route Plan.
- b) No construction work shall be allowed to commence on any section of the line, unless all gates in that section have been installed.
- c) Existing gates situated near and/or in the power line way leave and which are unsuitable for construction vehicle access must also be clearly marked. The Clerk of Works will be responsible to evaluate all marked fences prior to the installation of the line servitude gates.
- d) Existing access gates outside the power line way leave shall only be used after written approval is obtained from the relevant Landowner, for the use thereof.
- e) The Project Manager's Clerk of Works will be responsible to evaluate all marked fences and gates, prior to the installation of new line servitude gates and/or replacement of existing gates.
- f) The Contractor will be responsible for the detail setting-out of the gate- post and strut positions.
- g) The Contractor's work comprises:
  - a. Transport all line servitude gates, gate & fencing material and all other gate construction material.
  - b. Setting out of gate & fence post and strut positions.
  - c. Evaluating sub-soil conditions for foundation nominations.
  - d. Drilling/Excavating of holes for poles and struts.
  - e. Excavating of earth strap trenches.
  - f. Complete installation of all gate & fence posts and struts in 15MPa concrete footings.
  - g. Curing of concrete footings.
  - h. Install gate leafs and cut and re-tension existing fence wires.
  - i. Install earth straps, backfill, and compact trenches.
  - j. Treatment of all damaged sections on gate leaf frames, poles, struts, etc.
- h) The in-situ soil condition at each gate position will determine the type of gate post foundation to be installed.
- i)
- j) Servitude gates shall be erected with a gap no more than **100mm** between the bottom of the gate leaf and the natural ground level.
- k) Where gates are to be installed in jackal proof fences and game fences, a suitable concrete threshold as shown on the detail drawings shall be constructed at the gate opening. Gate leafs shall be covered with diamond mesh as specified on detail drawings.

- l) All gate and fence posts as well as post struts are to be installed in **15MPa** concrete footings. The concrete footings must be properly cured, in the most suitable method, for at least **14 days** prior to the tensioning of the fence wires.
- m) Earth strap trenches to backfilled slightly watered and thoroughly compacted in layers not exceeding 200mm in thickness.
- n) For soil formations with a very high resistivity the earth strap trenches to be backfilled with a **3:1 soil/agricultural gypsum** mixture.
- o) The initial tensions to be maintained in all existing fence wires. Where required, the Contractor shall replace rusted or damaged wire strands on either side of the gate with similar new wiring to prevent the movement of live stock and other animals. The Project Manager's Clerk of Works will determine the extent of replacing fence wires and a written instruction shall be given accordingly.
- p) The Contractor shall provide padlocks for all servitude gates. The Contractor shall furthermore ensure that all power line servitude gates and any other existing gate, used for construction purposes, in or outside the power line servitude are kept closed and/or locked when not in immediate use.
- q) The Contractor's supervising personnel and the Project Manager's Clerk of Works will be the only site personnel issued with keys for these padlocks. No keys shall be provided to Landowners to avoid conflict situations between Landowners.
- r) Landowners will be allowed to attach their personal padlocks in the lock chain, only after acceptance of the Employer's Clerk of Works.
- s) After the completion of all construction activities and the taking over of the works, the Contractor shall recover all his padlocks and replace it with padlocks supplied by the Employer.

### 3.12 Special requirements

- a) All construction vehicles shall pass through gates when crossing fences and the Contractor shall not be allowed to drop fences temporarily for the purpose of driving over it. No construction work shall be allowed to commence on any section of the line, unless all gates in that section have been installed.
- b) Installation of gates in fences on national road reserves shall comply with the ordinances of the relevant Provincial Authority. No servitude gates shall be installed in highway servitude fences.
- c) Existing gates within or close to the power line servitude, which are unsuitable for the access of construction vehicles must be removed by the Contractor and replaced with a new power line servitude gate, only when instructed by the Project Manager's Clerk of Works.
- d) The use of existing gates in or outside the power line servitude must be negotiated with and accepted by the relevant Landowner, prior to the use thereof.
- e) In terms of Employer's servitude agreement, Employer (and/or its appointed Contractor) has the right to enter and be present on a property at any time (in an appropriately marked vehicle), whether it be to perform work on the property itself or to gain access to adjacent properties. In order to assist with access, Employer may erect gates as necessary, in consultation with the Landowner.
- f) **No power line servitude gate shall be installed in the Spoornet Railway servitude fences, unless otherwise negotiated and agreed upon with the relevant Spoornet Authorities.**

### 3.13 Other Access

- a) In situations where private roads must be used for construction purposes, the condition of the said roads recorded (e.g. Photographed) prior to the use thereof and be agreed upon by the Employer, the Landowner and must be the Contractor.
- b) All private roads used as access to the site of work by the Contractor, shall be maintained by him at all times at his expense, and upon completion of the work, be left in at least the condition prior to the commencement of the construction activities.
- c) Where possible access along the power line must be established by vehicles passes over the same track on natural ground.
- d) Temporary access roads shall only be constructed and maintained where necessary at watercourses, steep slopes or where boulders and rocks prohibit vehicular traffic.
- e) No access roads shall be constructed in and/or outside the power line servitude without the written instructions from the Clerk of Works.
- f) Upon completion of the project, all construction access roads shall be closed unless otherwise specified by the Employer and/or Landowner.
- g) All temporary access roads shall be constructed in strict accordance with specification **TRMSCAAC1 Section4.4**, and to the satisfaction of the relevant Landowner.
- h) Loose boulders which obstruct the construction access as well as for running out the conductors shall be removed from the servitude.

### 3.14 Bush clearing

- a) All work to be in strict accordance with TRMSCAAC1, The Environmental Conservation Act No. 73 of 1989, the Conservation of Agricultural Resources Act No. 43 of 1983, the Standards and Specifications for the control and cutting of trees and bush within overhead line servitude's SCSASAAZ9 and the Environmental Management Plan for the specific project and spanning sheets.
- b) Trees and bush to be cut and/or trimmed on a careful and selective basis to ensure the required electrical clearances from all conductive equipment and to ensure the safety of the power line structures.
- c) A minimum 4,0m wide strip on the centre of the power line servitude all trees, bush and shrubs shall be cut at ground level to ensure proper access for construction purposes along the line. All wood must be removed from the servitude.
- d) Additional maximum 3,0m wide strips on either side of the mentioned 4,0m wide centre strip all trees, bush and shrubs shall be cut at maximum 150mm above ground level to ensure no interference with construction activities along the line. All wood must be removed from the servitude.
- e) Where tall trees are to be cut in the power line servitude, the total width of the servitude must be cleared, as well as the selective trimming of trees outside the servitude to ensure the safety of the overhead conductors and power line structures. The Clerk of Works will give the Contractor a written instruction for any trees to be trimmed outside the servitude.
- f) Trees that are felled shall be cut within 150mm above ground level, with the exception of a four meter (4,0m) wide access down the centre of the power line servitude in which the trees shall be cut as close as possible to ground level. Stumps need not be removed, unless conflict with a structure, guy anchor or access is involved, or if requested by the Clerk of Works.

- g) All stumps from trees, bush and shrubs shall be chemically treated immediately after cutting, to prevent any further growth thereof. The chemical treatment must be approved by the Employer's Environmental Practitioner prior to the purchasing and application thereof.
- h) Where no trees, bush or shrubs are present the clearing of access shall be done by crushing of small brush rather than the uprooting thereof. Scalping of the earth, or any unnecessary disturbance, will not be allowed as any means of clearing the servitude, except on steep side slopes where cuts and fills are required.
- i) Between structures, where no traffic is required, there shall be no removal of vegetation except as required for stringing of the power line. Access for the stringing of the power line shall be limited to one single track for all pulls. No cutting of bush and shrubs will be permitted across bush filled ravines or gullies where the bush will not interfere with the strung conductor. Alternative means shall be used to string the power line conductors.
- j) All chopped trees and bush will remain the property of the relevant Landowners, unless otherwise negotiated with the Employer's Clerk of Works.

### 3.15 Special bush clearing requirements

- a) One-week written notice must be given to the Employer's Environmental Practitioner before commencement with construction activities
- b) The Contractor shall use only approved and/or accredited weed killer applicators.
- c) The Contractor will not be allowed to cut and/or trim any endangered trees or shrubs in the servitude, unless written prove of the required permits, obtained by the Contractor, is given to the Employer's Clerk of Works.
- d) The use of existing gates and private roads in or outside the power line servitude for bush clearing purposes must be discussed with and accepted by the relevant Landowner, prior to the use thereof.
- e) All vehicles used for bush clearing shall pass through gates when crossing fences and the Contractor shall not be allowed to drop fences temporarily for the purpose of driving over it.

### 3.16 Constraints on how the Contractor Provides the Works

- a) **The contractor must list the name of the experienced construction supervisor for the duration of the contract below. This is compulsory and if not adhere to might result in the tender to be null and void.**

Name	I.D. number	Years of experience	Other

- b) Written notice will be given by the contractor to Employer, forty days prior to any switching that may be required by the contractor. The outage must be cancelled at least 5 working days prior to the actual date should anything happens, and the outage cannot take place. All stake holders to be informed by the COW in writing.
- c) The risk of all material (including conductor and material once supplied by Employer) lies with the contractor until that section of line is energized.
- d) Inform each landowner before entering their property and treat property with respect. The Contractor shall use the private farm roads with the necessary respect and maintain it throughout the construction period.
- e) Sign off all form/letter with each hand over to ensure that the customer is happy with the work completed on his property.
- f) The Contractor is to provide the works strictly according to all the requirements of Section 31 of the Occupational Health and Safety Act of 1993.



- g) The Employer Standards and specifications as per Annexe A are the requirements of the Contract. The Contractor shall comply in full with Contract Quality Requirements, "Matrices A and C" of NWS 1814/C1.
- h) The Contractor shall be responsible for the relevant Quality Assurance Requirements to be imposed on his subcontractors and suppliers of materials in terms of the above standards.
- i) No weather data are included in this specification and the Contractor is referred to the Weather Bureau, Department of Transport, Private Bag X097, Pretoria 0001 The Contract places the responsibility on the Contractor to foresee inclement weather. The Contractor shall take into account large variations in the weather patterns. No extensions of time will be granted for delays arising out of normal weather conditions. Where abnormal, unfavourable weather conditions are experienced, an extension of the Contract period may be considered by the Employer, by no claim for additional Preliminary and General or escalation of the Contract Price for the extended period will be granted.
- j) All work on site to be done in accordance with The Environmental Management Plan for this project.

### 3.17 Work and things supplied by the Contractor for the works

#### 3.17.1 Plant provided by the Employer

Employer will not supply any plant.

#### 3.17.2 Materials supplied by the Employer

Employer will supply the materials listed in the table below to the Contractor during the construction phase. Refer to the *Price List* for more details on these material items.

The Employer will deliver the specified material to the Contractor's material yard on site.

<b>BOM - CAP BANK REGULATOR</b>			
<b>SAP NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>
163343	WIRE STRAND,ST 7x4.00 1100MPA 1500m D3124	M	26
163345	WIRE STRAND.ST 3x3.35 1100MPA1500m D3124	M	15
163399	THIMBLE-ST TO FIT 14MM WIRE D3026	EA	2
163400	SHACKLE,D H/BACK PIN 70kN D3010	EA	18
163402	STAYROD 2000XM20 NON-ADJUST D3012	EA	2
163419	PLATE.STAY FOR 2000xM20 STAY ROD D3012	EA	2
163640	SET SCREW.HX GALV M12X30 NUT+WASH D3082	EA	4
167312	INSUL.STRAIN-STAY MV PORCELAIN D3144	EA	2
163768	BOLT,EYE GALV M20X250mm D3005	EA	10
163790	ROD,THREADED GALV M20X350 WASH+NUTD3015	EA	24
163803	COACH SCREW,GALV 75x12 HEX HD D3090	KG	0.36
163862	ROD,THREADED GALV M20X450 WASH+NUTSD3015	EA	9
163865	ROD,THREADED GALV M20X600 WASH+NUTSD3015	EA	3
163869	ROD.THREADED GALV M12X350 WASH+NUTSD3015	EA	4
163909	NUT,EYE 70kN M20X2,5-6H BOLT D3004	EA	9
163938	STAPLE,GALVANISED WIRE 40LG X 4 W D3129	KG	0.86
163941	NAIL.CLOUT 40mm GALV D3169	KG	0.11
164282	BRACKET.L FUSE-CUT/OUT 22kV WDXARM D3086	EA	12
164312	CLIP,BONDING 22D HOLE D3033	EA	36
164523	POLE.WOOD 10.0X200-219 TOP DIA D0052	EA	4
164551	XARM.WOOD 3.5X140-159 TOP DIA D0063	EA	1
164567	POLE.WOOD 11.0X180-199 TOP DIA D0051	EA	1
164568	POLE.WOOD 11.0X200-219 TOP DIA D0051	EA	1

164586	XARM.WOOD 2.0X120-139 TOP DIA D0060	EA	2
164615	WIRE.BARBED GALV 12SWG 12.5kg D3170	EA	0.4
165065	FUSEHOLDER 22kV 100A FUSE-CUT/OUT D3086	EA	3
165066	LINK.SOLID 22kV FOR FUSE CUT-OUT D3086	EA	9
165495	CLAMP.P/G 2B AL-AL 4 -15 DIA M+T D3058	EA	64
165559	CLAMP, EARTH ROD 16 RODPH/BRNZ	EA	8
165566	LINE TAP,TFR BRASS TINNED M12 D3048	EA	1
167492	INSUL,L/ROD 22kV 40kN 450C/L 20C D3042	EA	18
168265	BRACKET.TYPE F METER BOX 2400LG D3022	EA	2
168552	BRACKET.POLE TOP 402x60x110 ARM D3046	EA	2
168553	STRAP,TIE ST GALV 910x50x6 D3031	EA	12
168669	EARTH ROD CU 1500LGx16mm DIA TREADLESS	EA	8
171336	WIRE,ELECTRICAL:EARTH;16 MM2;CU;BARE D3139	M	45
172393	PLATE.BLANK ALU POLE MK 25X150 D3049	EA	6
172423	SIGN.DANGER 150x150x0.6 ELECTSAFETYD3202	EA	4
174939	FUSE-CUT/OUT BASE 22kV INLAND D3086	EA	12
179808	TAP CONN.T OFF 6.3- 9.0 I/C D3153	EA	26
179943	JOINT.NON-TEN AL 6.3-9.0 D I/C D3098	EA	3
179944	JOINT NON-TEN AL 9.0-15.OD I/C D3098	EA	3
180018	LUG.BI-MET 6.3- 9.0 M12 0 DEG I/C D3166	EA	18
183978	XARM.WOOD 6.0X160-179 TOP DIA D0066	EA	2
184235	BRACKET.EQUIP.PLATFORM 900mm ANGLE D3023	EA	2
184236	SUPPORT CRADLE.VOLT REG x1POLE MNT.D3220	EA	4
185949	GUY GRIP.DBL WRAP MAKE OFF 7/4.00 D7047	EA	2
187157	PADLOCK, ST LV MASTER FS OU - ORANGE - D6050	EA	2
189726	PLATFORM.REGUL H-POLE 2600mm LG. D3016	EA	2
197852	PIPE,NON MTLC:10 MM;LDPE;THK 1.6 MM D3127	M	28.004
197853	PIPE,NON MTLC:16 MM;LDPE;THK 2 MM D3127	M	4
216687	INSUL CAPPED POST 22KV 4kN 31 HVH D3017	EA	11
219854	SPINDLE SHORT M20 x 50 RATCHET D2050	EA	2
400660	WIRE.CU 16SQ 7/1.79 STR PVC BLK D3137	M	45
401310	CLAMP,REV PIST 3B 6.0 TO 16.0 D7022	EA	3
401314	S/ARR S/CL 11kV MCOV 12kV 20 D6216	EA	6
402509	GUYGRIP-D/END ST COND 7/4.0 D3069	EA	6
402517	TIE,TOP GRVE B/FOX INLAND D3081	EA	10
402521	DEAD END,HELICALLY FORMED FOX/35 D3065	EA	3
402527	DEAD END.HELICALLY FORMED MNK/PINE D3065	EA	6
402551	CLAMP ,THIMBLE CLEV A-ALLOY 40kN D3007	EA	9
402575	TIE.TOP GRVE B/MINK INLAND D3081	EA	1
403027	COND.ACSR FOX 8.37D UNGRS D3136	M	96.25
404427	LUG.CRIMP CU 16.0SQxM12 F/H D3102	EA	5
571209	XARM,WOOD 2.5X140-159 TOP DIA D0061	EA	7

	<b>BOM - BOEMANSKOP 22KV LINES</b>		
<b>SAP NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>BOM QTY</b>
163343	WIRE STRAND,ST 7x4.0 1100MPA 1500m D3124	M	832
163345	WIRE STRAND,ST 3x3.35 1100MPA 1500m D3124	M	314
163399	THIMBLE,ST TO FIT 14mm DIA. WIRE D3026	EA	64
163400	SHACKLE,STRAIGHT PIN TYPE 70KN D3010	EA	160
163402	STAYROD 2000xM20 97kN NON-ADJUST D7023	EA	64
163419	PLATE,STAY 340x375x6 80x26 SLOT D3172	EA	65
163768	BOLT,EYE:20 MM;70 KN;SHNK LG 250 MM	EA	64
163790	ROD,THD:M20-2.5-6G;LG 350 MM	EA	86
163803	COACH SCREW,GALV 75x12 HEX HD D3090	KG	7.68
163862	ROD,THD:M20-2.5-6G;LG 450 MM	EA	50
163909	NUT,EYE 70kN FOR M20x2,5-6H BOLT D3004	EA	56
163938	STAPLE,GALVANISED WIRE 40LGx4WD D3129	KG	6.845
163941	NAIL,CLOUT 40mm GALV D3169	KG	0.59
164282	BRACKET,L FUSE-CUT/OUT 22kv WD XARM D3086	EA	14
164307	BRACKET,STRUT SWIVEL WOOD POLE D3150	EA	1
164312	CLIP,BONDING 22D HOLE GALV D3033	EA	165
164313	ANCHOR ASSY,ST SOIL 380x220x70 D3035	EA	1
164551	XARM,WOOD 3.5x140-159 TOP DIA D0063	EA	19
164562	POLE,WOOD 10.0m x 160-179 H4 D0052	EA	1
164566	POLE:WOOD;160-179MM TOP DIA X LG 11M	EA	43
164570	POLE:WOOD;160-179MM TOP DIA LG 12 M	EA	4
164572	POLE:WOOD;180-199MM TOP DIA X LG 12 M	EA	3
164575	POLE,WOOD 13.0 x 160-179 H4 D0056	EA	4
164615	WIRE,BARBED GALV 12SWG 12.5kg D3170	EA	0.3
165055	S/ARR DIST 22kv MCOV 19.2kv INLAND D3100	EA	6
165065	FUSE HOLDER 22kv 100A FUSE-CUT/OUT D3086	EA	2
165066	LINK,SOLID 22kv FOR FUSE-C/OUT D3086	EA	12
165495	CLAMP:P/G ;4-15 M; 4-15 T ;AL-AL	EA	154
165559	CLAMP,EARTH ROD 16 RODPH/BRNZ D3093	EA	4
165566	LINE TAP,TFR BRASS TINNED M12 D3048	EA	1
167312	INSUL:STRAIN STAY;LG 140 X WD 85 MM	EA	64
167492	INSUL,L/ROD 22kv 40kN 450C/L LM D3042	EA	160
168279	GLAND,CABLE:ADJUSTABLE;NO 2;BRS NI PLTD	EA	4
168534	CLAMP,SUSP CRADLE CON 8,0-18,0 D3008	EA	40
168553	STRAP,TIE ST GALV 910x50x6 D3031	EA	20
168669	EARTH ROD Cu 1500x16D THREADLESS D3091	EA	4
168689	XARM, ST INTERM T 90x65x8x2000LG L D3001	EA	20
171336	WIRE,ELECTRICAL:EARTH;16 MM2;CU;BARE	M	15
172393	PLATE,BLANK ALU POLE MK 25x150 D3049	EA	55
172423	SIGN,DANGER ELECT SYMB 150x150x0.6 D3202	EA	7
174939	FUSE-CUT/OUT BASE 22kv INLAND D3086	EA	14
175078	TFR 16kVA 22kv/240V COASTAL D3021	EA	1
175491	CONDUCTOR,ELEC:CU-CLAD ST ;EARTH	M	19
180018	LUG,BI-MET 6.3-9.0D M12 0 DEG I/C D3166	EA	24

185155	RECLOSER 11+22kV 400A 8kA WITH IRTU D3180	EA	1
185949	GUY GRIP,DBL WRAP MAKE OFF 7/4.00 D7047	EA	64
197852	PIPE,NON MTLC:10 MM;LDPE;THK 1.6 MM	M	18.938
197853	PIPE,NON MTLC:16 MM;LDPE;THK 2 MM	M	2
216687	INSUL,CAPPED POST 22kV 4kN HVH D3017	EA	26
219854	SPINDLE:SHORT M20 X 50MM RATCHET	EA	20
247519	CONNECTOR,LUG:FIRED WEDGE;(2) 14 MM;AL	EA	28
247523	CONNECTOR,TEE:RUN 48.20MM2 ACSR	EA	77
247525	CONNECTOR,TEE:RUN 73.65MM2 ACSR	EA	28
400900	BUCKLE,STRAP 12 C254 D3110	EA	45
400902	STRAP,TIE DOWN:WD 12MM X THK 0.75MM	EA	1.15
401310	CLAMP,STRAIN:3B;70 KN;15-6 MM	EA	45
402509	GUYGRIP, D/END ST COND 7/4 D3069	EA	192
402517	TIE,TOP GRVE B/FOX INLAND D3081	EA	26
402519	ARMOR ROD,HELICALLY FORMED FOX/35 D3064	EA	40
402521	DEAD END,HELICALLY FORMED FOX/35 D3065	EA	75
402551	CLAMP,THIMBLE CLEV A/ALLOY 40kN D3007	EA	75
403027	COND,ACSR FOX 8.37D UNGRS D3136	M	11937.55
404122	CABLE ELECT:1 KV;2C;CU;4 MM2;STL WIRE	M	10
404427	LUG, CRIMP CU 16.0SQxM12 F/H D3102	EA	5
571209	X/ARM,POLE:140-159 22MM HOLES;LG 2.5 M	EA	11

<b>BOM-KORIA 11KV LINE</b>			
<b>SAP NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>
163343	WIRE STRAND,ST 7x4.0 1100MPA 1500m D3124	M	117
163345	WIRE STRAND,ST 3x3.35 1100MPA 1500m D3124	M	89.5
163399	THIMBLE,ST TO FIT 14mm DIA. WIRE D3026	EA	9
163400	SHACKLE,STRAIGHT PIN TYPE 70KN D3010	EA	57
163402	STAYROD 2000xM20 97kN NON-ADJUST D7023	EA	9
163419	PLATE,STAY 340x375x6 80x26 SLOT D3172	EA	9
163768	BOLT,EYE:20 MM;70 KN;SHNK LG 250 MM	EA	27
163790	ROD,THD:M20-2.5-6G;LG 350 MM	EA	50
163803	COACH SCREW,GALV 75x12 HEX HD D3090	KG	1.2
163862	ROD,THD:M20-2.5-6G;LG 450 MM	EA	31
163869	ROD,THD:M12-1.75-6G;LG 350 MM	EA	4
163909	NUT,EYE 70kN FOR M20x2,5-6H BOLT D3004	EA	24
163938	STAPLE,GALVANISED WIRE 40LGx4WD D3129	KG	2.645
163941	NAIL,CLOUT 40mm GALV D3169	KG	0.21
164282	BRACKET,L FUSE-CUT/OUT 22kV WD XARM D3086	EA	23
164312	CLIP,BONDING 22D HOLE GALV D3033	EA	93
164527	POLE,WOOD 7.0X120-139 TOP DIA D0050	EA	1
164551	XARM,WOOD 3.5x140-159 TOP DIA D0063	EA	11
164562	POLE,WOOD 10.0m x 160-179 H4 D0052	EA	1
164566	POLE:WOOD;160-179MM TOP DIA X LG 11M	EA	6
164567	POLE:WOOD;180-199MM TOP DIA X LG 11M	EA	2
164572	POLE:WOOD;180-199MM TOP DIA X LG 12 M	EA	2

164615	WIRE,BARBED GALV 12SWG 12.5kg D3170	EA	0.6
165054	S/ARR DIST 11kV MCOV 10kV INLAND D3100	EA	12
165065	FUSE HOLDER 22kV 100A FUSE-CUT/OUT D3086	EA	2
165066	LINK,SOLID 22kV FOR FUSE-C/OUT D3086	EA	21
165495	CLAMP:P/G ;4-15 M; 4-15 T ;AL-AL	EA	94
165559	CLAMP,EARTH ROD 16 RODPH/BRNZ D3093	EA	8
165566	LINE TAP,TFR BRASS TINNED M12 D3048	EA	2
167312	INSUL:STRAIN STAY;LG 140 X WD 85 MM	EA	9
167492	INSUL,L/ROD 22kV 40kN 450C/L LM D3042	EA	57
168265	BRACKET,TYPE F METER BOX 2400LG D3022	EA	2
168279	GLAND,CABLE:ADJUSTABLE;NO 2;BRS NI PLTD	EA	6
168534	CLAMP,SUSP CRADLE CON 8,0-18,0 D3008	EA	6
168552	BRACKET,POLE TOP 402x60x110 ARM D3046	EA	2
168553	STRAP,TIE ST GALV 910x50x6 D3031	EA	14
168627	KIOSK METER:3PH ;CT/VT	EA	1
168669	EARTH ROD Cu 1500x16D THREADLESS D3091	EA	8
168689	XARM, ST INTERM T 90x65x8x2000LG L D3001	EA	3
171336	WIRE,ELECTRICAL:EARTH;16 MM2;CU;BARE	M	30
172393	PLATE,BLANK ALU POLE MK 25x150 D3049	EA	12
172423	SIGN,DANGER ELECT SYMB 150x150x0.6 D3202	EA	14
174939	FUSE-CUT/OUT BASE 22kV INLAND D3086	EA	23
175077	TFR 16kVA 11kV/240V COASTAL D3021	EA	1
175465	PLATFORM,EQUIP H-POLE 2600mm LG. D3020	EA	1
175466	BRACKET,EQUIP PLATFORM 620mm ANGLE D3023	EA	1
175491	CONDUCTOR,ELEC:CU-CLAD ST ;EARTH	M	37
180018	LUG,BI-MET 6.3-9.0D M12 0 DEG I/C D3166	EA	42
185155	RECLOSER 11+22kV 400A 8kA WITH IRTU D3180	EA	1
185949	GUY GRIP,DBL WRAP MAKE OFF 7/4.00 D7047	EA	9
197852	PIPE,NON MTLC:10 MM;LDPE;THK 1.6 MM	M	24.941
197853	PIPE,NON MTLC:16 MM;LDPE;THK 2 MM	M	2
216687	INSUL,CAPPED POST 22kV 4kN HVH D3017	EA	14
219854	SPINDLE:SHORT M20 X 50MM RATCHET	EA	5
247519	CONNECTOR,LUG:FIRED WEDGE;(2) 14 MM;AL	EA	46
247523	CONNECTOR,TEE:RUN 48.20MM2 ACSR	EA	47
247525	CONNECTOR,TEE:RUN 73.65MM2 ACSR	EA	46
400900	BUCKLE,STRAP 12 C254 D3110	EA	17
400902	STRAP,TIE DOWN:WD 12MM X THK 0.75MM	EA	0.5
401310	CLAMP,STRAIN:3B;70 KN;15-6 MM	EA	21
402167	CT+VT 11kV-110V B 3VT+3CT I/LD D3118	EA	1
402509	GUYGRIP, D/END ST COND 7/4 D3069	EA	27
402517	TIE,TOP GRVE B/FOX INLAND D3081	EA	14
402519	ARMOR ROD,HELICALLY FORMED FOX/35 D3064	EA	6
402521	DEAD END,HELICALLY FORMED FOX/35 D3065	EA	30
402551	CLAMP,THIMBLE CLEV A/ALLOY 40kN D3007	EA	30
403027	COND,ACSR FOX 8.37D UNGRS D3136	M	1424.5
404122	CABLE ELECT:1 KV;2C;CU;4 MM2;STL WIRE	M	10

404427	LUG, CRIMP CU 16.0SQxM12 F/H D3102	EA	8
404761	CABLE ELECT:1 KV;12C;CU;2.5 MM2;STL WIRE	M	8
571209	X/ARM,POLE:140-159 22MM HOLES;LG 2.5 M	EA	8

The **contractor** must ensure that the BOM correlate with the construction drawing /span plan.

### 3.17.3 Materials to be supplied by the **Contractor**.

All materials supplied by the *Contractor* to be approved by the **Project Engineering Specialist** and the **Technology and Quality (T&Q) Representative** before commencing with the project.

**Please note that this list serves as an indication of material required, it remains the *contractors* Responsibility to ensure the accuracy thereof. No compensation will be made by the employer should the quantities or materials specified be incorrect .The contractor also to ensure that the BOM, the scope of works as well as the quantities and activities correlate with the activities and BOM in the Price List. Should this not be the same, the contractor to immediately inform the Employer as no compensation will be made after tender closure.**

Once the plant and/or materials have been delivered to the *Contractor's* yard on site, the loading, transporting to site, off-loading and safekeeping thereof becomes the responsibility of the *Contractor*. He must make the necessary arrangements for safe storage on site, offering adequate protection against theft, damage, wind and weather. The responsibility for insurance of materials against any form of damage or theft after issue thereof rests with the *Contractor*.

It is essential that a good record-keeping system exist whereby control over quantities on site can be kept. All new deliveries to the site-store and all materials and plant issued for construction must be recorded. At any time, it must be possible for the *Project Manager* to establish from these records exactly what material and/or plant is kept in store or has been erected. These figures will regularly be compared to the actual quantities measured on site and the formal *Employer* issuing invoices.

At all times it will be assumed that the *Contractor* has been ensured upon issue of material and/or plant that no visible damage has occurred to it. In the case of damaged material and/or plant, acceptance must be refused. If a dispute arises, the *Project Manager* must be called in for a decision. Damaged material and/or plant found on site will be replaced at the cost of the *Contractor* and no extension of contract time will be granted for the extra delivery time.

Liability for inherent defects in material and/or plant issued does not lie with the *Contractor*. If defects in material, plant or in the *Works*, due to the use of patently defective material and/or plant are discovered, new material and/or plant will be issued free of charge. The *Contractor* will be compensated for any additional expenses incurred due to these defects, including delivery costs. If warranted, extension of contract time will also be granted.

If, however, it is established that defects in material, plant and/or the *Works* were due to damage caused to material and/or plant after issue, the *Contractor* will be held responsible for all replacement and repair costs to the material, plant and/or the *Works*, as well as loss of time. The decision concerning the cause and responsibility of defects as well as the extent of compensation (if any) rests with the *Project Manager*.

In a case where the *Contractor* met the required lead time for ordering and the material and/or plant is not available, any resultant standing time or additional expenditure incurred will be the responsibility of the *Employer*. Notice of this must be given to the *Project Manager* within two days of the occurrence thereof, who will then determine what the extent of lost of time and additional expenditure will be.

The *Contractor* must make the necessary arrangements for safe storage on site, offering adequate protection against theft, damage, wind and weather. The responsibility for insurance of materials against any form of damage or theft after issue thereof rests with the *Contractor*.

It is essential that a good record-keeping system exist whereby control over quantities on site can be kept. All new deliveries to the site-store and all materials and plant issued for construction must be recorded. At any time, it must be possible for the Client to establish from these records exactly what material and/or plant

is kept in store or has been erected. These figures will regularly be compared to the actual quantities measured on site and the formal *Employer's* issuing invoices.

### **Equipment**

The *Contractor* shall supply all the equipment required to complete the works

### **Holding Points of the works**

No construction activities will commence until the site is officially handed over by the *Project Manager* or *his representative* to the *Contractor*.

No construction activities will commence prior to the submission of a detailed construction program and special tool calibration certificates, etc. by the *contractor*.

The *Employer's* Clerk of Works will have the prerogative to execute a proper inspection on the condition of all construction tools, equipment and vehicles prior to the commencement of any construction activities.

**The holding points shall be agreed between the *Contractor* and the *Employer Representative* and shall enforced as per the requirements of document 34-212, 'Inspection and Maintenance of High Voltage Cables'**

The *Contractor* will be held responsible for any construction errors, defects, claims, etc. for continuing with the construction activities at the "hold point" stages without the written instructions from the *employers'* Clerk of Works.

### **3.18 Other limitations**

The *Contractor* shall use the private roads with the necessary respect and maintain it throughout the construction period.

The *Contractor* shall control his activities and processes in such a way as to ensure compliance with the specifications. He shall carry out as a minimum requirement all the tests laid down in the specifications and shall submit all the test results to the *Employer*.

### **3.19 Requirements for the programme**

The *Employer* Standards, as indicated in Specifications of this document, are requirements of the Contract.

- a) Give two weeks written notice to Eskom, for inspection of the works.
- b) Submit a program together with the Tender to state the following:
  - Which activities will be completed by a certain date / TIME?
  - Which invoices will be submitted for payment by a certain date/ TIME?

The *Contractor* is to submit a construction programme based on the assessment stages as reflected in the Price List i.e. indicating the various assessment stages with activities like infrastructure, house connections, commissioning, etc.

- c) Reporting requirements are as follows:

#### **Two Weekly REPORTS**

- Executive summary (typical one to two paragraphs).
- Physical progress on all aspects of the project on the Monday of the week before 12:00.
- Performances to date.
- Problems experienced.
- Priorities for the next two weeks.
- Corrective actions necessary and needed.
- Material list required or outstanding from the Employer

**Monthly Report**

- Physical progress on all aspects of the project on the first working day of each month before 12:00.
- Capital projections report.

d) The tenderer's programme shall be based on and shall reflect inter alia, the following key dates

<b>Activity No</b>	<b>Activity Description</b>	<b>Key Date</b>
1	Site Handing Over	
2	Construction Kick off	
3	Progress meetings	
4	Site inspections	
5	Project completion and handover	

**3.20 Invoicing and payment**

In order that the Project Manager may assess the amount due at each assessment date, the Contractor is to submit the following information in the format and number of copies stated

**SARS Requirements**

- TAX INVOICE should be displayed in a PROMINENT PLACE on all invoices.
- Eskom's name should be stated ""Eskom Holdings Limited.""
- " Free State Operating Unit (FSOU)" should be displayed.
- Address and VAT registration of the recipient (That means Eskom address and VAT number)
- Name, address, and VAT number of the contractor must be displayed.
- An INDIVIDUAL Serial number (Tax invoice number) and DATE issued.
- The Contract Order number.
- A description of goods and/or services supplied must be showed on the invoice. Refer to the specific Activity Stage and Item No, as stated in the Price Schedule. Clearly state the quantity or volume of goods or services supplied and the Tender Price for each item, the amount of the current claim for each item, the amount previously claimed for each item and the amount due for each item.
- The quantity or volume of goods or services supplied.
- The VAT amount showed on each invoice.
- Where the contractor is NOT registered for VAT the invoice must state only INVOICE in a prominent place

The Employer accepts only original invoices.

Examples of Payment Certificates and Tax Invoices for the Eskom NEC Engineering & Construction Short Contract are shown on the next two pages of this contract.



**Payment certificate and Tax Invoice****This certificate is issued in terms of Clause 50 of the Conditions of Contract.**

<b>TITLE OF THE CONTRACT:</b>
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<b>CONTRACTOR:</b>	<b>EMPLOYER:</b>
Contact Person:	Contact Person
Address:	Address:
Telephone No:	Telephone No:
Fax No:	Fax No:

<b>Contractor's Invoice Number:</b>	<b>Contract Order No.:</b>
<b>Date issued:</b>	
<b>Contractor's VAT No.:</b>	<b>Employer's VAT No.: 4740101508</b>

DESCRIPTION	CUMULATIVE THIS CERTIFICATE	CUMULATIVE PREVIOUS CERTIFICATE	NOW DUE
Price for Work Done to Date	R	R	R
Compensation events	R	R	R
<b>Sub-totals:</b>	R	R	R
Less ____% retention percentage on (a) + (b) (i) Planned first retention release date (completion date): ____/____/____ (ii) Planned final retention release date (defects date): ____/____/____	R	R	R
<b>Sub-totals:</b>	R	R	R
Other amounts due to/by the Contractor	R	R	R
<b>Sub-totals:</b>	R	R	R
Add retention released	R	R	R
<b>Sub-totals:</b>	R	R	R
Less delay damages	R	R	R
<b>Sub-totals:</b>	R	R	R
Add VAT at 14 %	R	R	R
<b>AMOUNT DUE TO/FROM THE CONTRACTOR:</b>	R	R	R

**Assessment Prepared By:**

.....  
 PRINT NAME                      SIGNATURE                      DATE

**Certified by the Programme Manager:**

.....  
 PRINT NAME                      SIGNATURE                      DATE

### 3.21 Insurance provided by the Employer

As stated for in the *Employer's* Construction All Risk Insurance Policy available on request from Eskom Group Insurance.

To be dealt with in accordance with ECC3 Core Clause 87.1, 87.2 and 87.3 and additional requirements are also stipulated in Z Clauses

### 3.22 BBEE and preferencing scheme

#### Special Conditions of Contract (Application of other criteria in terms of Section 2(1)(f) of PPPFA)

##### The objective criteria as follow:

- Transformation of this sector by the appointment of a Black Owned Firm(s) that meet the functionality requirements;
- Development of Black Owned steel fabrication companies;
- Appointment of companies located within the Republic of South Africa.

##### NB: The Joint Venture may be:

- Black Owned and Black Owned Company;
- Black Owned Company (Majority Shareholder) and Non-Black Owned Company;
- Black Women Owned Company and Black Owned Company, and;
- Black Women Owned (Majority Shareholder) and Non-Black Owned Company.

A 51% or more Black Owned Companies or Joint Venture where the lead company has 51% or more black ownership.

#### Procurement Preference Hierarchy

##### Preference for awarding this contract and/or subcontracting are in the following order:

- Companies with more than 51% Black Ownership
- Enterprises Owned by Black People Living with Disability (BPLwD)
- Black Youth Owned Enterprises (BYO)
- Black Women-Owned Enterprises (BWO)
- Black Owned Enterprises (BO)

Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor's* B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change

### 3.23 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Accelerated and Shared Growth Initiative - South Africa in accordance with and as provided for in the *Contractor's* ASGI-SA Compliance Schedule stated below

The *Contractor* shall keep accurate records and provide the *Employer* with reports on the *Contractor's* actual delivery against the above stated ASGI-SA criteria

The *Contractor's* failure to comply with his ASGI-SA obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract

### 3.24 Project Specifications and Standards

- This is a list of all the specifications and other documentation referenced or described as being part of the *Works* Information.
- This list includes publicly available standard specifications which may not be attached, but which are part of the *Works* Information.

**Table 1: Reference to National and International Specifications**

Topic	Document
Aerial Bundled Conductor	SABS 1418, Part 1 to 3 DTS 0105 (NRS 018)
Bolts and Nuts	SABS 135
Bolts, Eye	SABS 178
Busbars	SABS 1195
CNE	SABS 1268:1979 NRS 016:1991
Cables, installation of electric	SABS 0198:1988
Cables, low voltage	NRS 012:1991
Cables, medium voltage	NRS 013:1991
Cable (house service split concentric)	DTS 0084 (NRS 017)
Cable Glands	SABS 808
Cable Ties	DTS 0086 (NRS 020)
Clamps (strain for split concentric)	
Clamps (suspension for split concentric)	
Clamps Strain	SABS 178
Clevis Tongue Adaptor (twisted)	SABS 178
Clips for Wiring	
Compression Fittings	BS 3288 Part 1 (Tests)
Concrete Poles	SABS 470
	DTS 0106
Conductor ACSR/AAC and AAAC	SABS 182
Conductor, Covered	DTS 0087 (NRS 021)
Conduit Saddles	
Conduit	
Connectors, lug/termination	NRS 028
Connectors, insulation piercing	EDF 6737/HN 33 E60 (Main cable 350 mm <sup>2</sup> to 70 mm <sup>2</sup> , take-off 6 mm <sup>2</sup> to 35mm <sup>2</sup> )
Connectors, mid-span/full tension	BS 3288 (Tests)
Connectors, mid-span/no tension	SABS 0162
Connectors	SABS 1200 H/HA
Cross Arm Braces	
Cross Arms	SABS 0162
	SABS 1200 H/HA
D Fuses	DTS 0048 Rev 0
Earthing Rods	SABS 1063
	SABS 0199

**Table 1 Continue.....**

<b>Topic</b>	<b>Document</b>
Electricity Dispenser	SABS 1524-1
	NRS 009-1
Fittings (strain and suspension)	
ABC	DTS 0105 (NRS 018)
Fuse Holder	SABS 172
Fuses	BS 88
Galvanizing	SABS 763:1988
	SABS 935
Harness Wiring	
Insulator Hardware	IEC/NWS 1536
Insulator Spindle	DTS 0092
Isolators	SABS 0162
	SABS 1200 H/HA
Line Construction	NWS 1512
Links Tri-links	IEC/NWS 1536
Links, ganged 3 phase (isolators)	IEC/NWS 1536
Links, pull Stick (knife links)	IEC/NWS 1536
Links, single Pole "Huck-links"	IEC/NWS 1536
Long Rod Insulators	DTS 0092
Miniature Circuit Breakers OHASA Act (1993) and it's regulations and amendments	SABS 156
Pole Top Service Box	DTS 0104 (NRS 032)
Post Insulators	DTS 0092
Preformed Tension Wraps	SABS 178
Preformed Ties	
Ready Boards	DTS 0085 (NRS 019)
Reticulation LV	DTS 0090 (NRS 023)
Road crossing standard	DTS0060
Safety on Construction Sites	NWS 1058
Service box	DTS 0104 (NRS 032)
Stainless Steel Straps and Buckles	

**Table 1 Continue....**

<b>Topic</b>	<b>Document</b>
Stay Assemblies	BS 16
Stay Attachment Brackets	SABS 0162
Stay Insulators	
Stay Wires	SABS 182, Part 5
Surfix Wiring	SABS 1507
Surge Diverters	NWS 1108
Symbolic Safety Signs	SABS 1186:1978
Thimbles	BS 464

Transformers, 100 kVA self-protected	DTS 0080 (NRS 027)
Transmission line hardware	NWS 1827
Washers	SABS 135
Wire, PVC Covered	SABS 182
Wire Rope Grips	BS 462
Wire, Stranded Copper, bare	
Wood Poles, pine gum	SABS 753
	SABS 754

**Table2: Guidelines and Recommended Practices**

Title	Document
Overhead Reticulation : Recommended Practice for Low Cost Urban Reticulation	NRS 023 : 1991 (DTS 0090)
Eskom Electrification Standard: Volumes 1 & 2.	
Code of Practice for the Application of CNE on Low Voltage Distribution Systems.	NRS 016 : 1991 (DTS 0103)
Power Line Crossings of Proclaimed Roads, Railway Lines, Tramways and Important Communication Lines.	DTS 0060 z
Code of Practice for the Joint use of Structures for Power and Telecommunication Lines.	NRS 043 of 1997

**Table 3: General National Standards and Acts**

Document	Rev./issue	Title and Publisher
Act no. 43	1983	Conservation of Agricultural Resources Act.
Act no. 73	1989	Environmental Conservation act.
Act no. 31	1963	Fencing Act.
Act no. 122	1984	Forest Act.
TRH14	1985	Guidelines for road construction materials
Act no. 63	1970	Mountain Catchments areas act.
Act no. 85	1993	Occupational health and safety act.
SAISC	1990	South African Steel Construction Handbook
NWP 3109		Standard drawing practice
		5. Eskom New Works Standards
NWS 1017		Accident Prevention
NWS 1494	3	Fire prevention and protection of contractors and Eskom premises on Engineering sites
NWS 1060		Injury prevention and protection
NWS 1814/C1		Quality assurance requirements for civil and building contracts
NWS 1058	4	Safety at construction sites: Requirements to be met by Contractors









**Table 3 General Eskom Standards**












Document	Rev./issue	Title and Publisher
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ESKPVAAL7 2	Environmental impact assessment procedure for Eskom
34-479 0	Specification for Battery rooms
ESKPBAAD6	Environmental management policy
OPR 6204	Eskom Operating Regulations
DTOS 0071 0	Eskom Standard for Barricading
DTMG 0112	Guideline for the application of herbicides for weed eradication in substations
DTNG 0012	Guideline for the application of Herbicides for weed eradication in substations
ETP 023	Herbicide management policy
EVS 005 1	Quality requirements for quality related items and equipment
EVS 010	Quality requirements for quality related services
SCSASAAQ1 2	Quality Control Process for the Checking of Distribution Substation Construction Before Handing Over for Commercial Operation.
SCSPVABM 0	Co-ordination of Safety on Capital Projects
9	
D-DT-5240	Earthing Standard

THE ATTACHED DOCUMENTS FORM PART OF THIS LEGAL BINDING CONTRACT, THE CONTRACTOR CONFIRMS THAT HE HAS FAMILIARIZED HIMSELF WITH ALL THE EMBEDDED DOCUMENTS FROM 1 TO 12 AS INDICATED.

**DO NOT PRINT AND SEND THEM WHEN RETURNING THIS CONTRACT**

<u>No</u>	<u>UNIQUE IDENTIFIER</u>	<u>REVISIO</u>	<u>DOCUMENT TITLE</u>
1	32 - 727	0	<b>SAFETY, HEALTH, ENVIRONMENT AND QUALITY (SHEQ) POLICY 32-727</b>  Copy of  240-68099512 (Rev 9)  240-105658000  240-109253302 _ 240-12248652 (Rev 7)Form A Tender & CorSupplier Quality ManQuality Control Plan o  240-109253698 CQP Template 2021.docx
2	32 - 136	0	<b>CONSTRUCTION SAFETY HEALTH AND ENVIRONMENTAL MANAGEMENT</b>  20230919 BRA Wood  20230926 OHS  240-77471499 (2)  20230926 OHS Pole Replacement uncSpecification Wood PcAnnexure B_Class 3&4Tender Evaluation_Cla
3	32-524	0	<b>DEVELOPING A SAFETY, HEALTH AND ENVIRONMENTAL SPECIFICATION</b>  Safety, Health,  Release  SHEQ Policy poster Environment and Quaannouncement of SHE rev 6.pdf
4	34 - 333	1	<b>HEALTH AND SAFETY REQUIREMENTS TO BE MET BY PRINCIPAL CONTRACTORS EMPLOYED BY ESKOM DISTRIBUTION 34-333</b>

			 4_Health and Safety Requirements to be n
5	240-62196227	1	<b>LIFESAVING RULES</b>  240-62196227 - Life Saving Rule Rev 6.pdf
6	CONSTRUCTION REG 3		<b>NOTIFICATION OF CONSTRUCTION WORK TO DEPARTMENT OF LABOUR</b>  6_Notification of Construction Work to
7	CONSTRUCTION REG 4 & 5		<b>APPOINTMENT LETTERS FOR CLIENT REPRESENTATIVE, PRINCIPAL CONTRACTOR &amp; CONTRACTOR</b>  7_Appointment letters for Client repr
8 & 9	OHS ACT		<b>WRITTEN AGREEMENT ON OHS ACT SECTION 37(2) &amp; STANDARD CLAUSE</b>  8_Written agreement on OHS A  9_Standard clause Eskom Contracts Sed
10, 11 & 12	34 - 1063	0	<b>EXPANDED PUBLIC WORKS REPORT 34-1063.</b>  10_34-1063 EPWP  11_EPWP Guidelines  12_Eskom Dc EPWP Works Instruction.pdSecond edition 2005,report template rev 4
13	<u>DST 34-961</u>	0	<b>LEGAL APPOINTMENTS AND AUTHORIZATIONS</b>  13_Legal Appointments and Au
14	TPC 41-55		<b>TRANSPORTING PERSONS ON BACK OF VEHICLES</b>  14_Transporting of Passengers on the ba

### Acknowledgement by Contractor

I/WE, ..... DO HEREBY ACKNOWLEDGE HAVING READ AND UNDERSTOOD THE ABOVE ANNEXED DOCUMENTS OF THIS CONTRACT.































I/WE UNDERTAKE TO STUDY AND ABIDE BY THESE REQUIREMENTS AT ALL TIME.

SIGNED AT: ..... ON THE ..... DAY OF .....20.....

**Note:** Please return the above two pages with the other tender returnable to the Employer office that issued this enquiry after complying with the above.

### 3.25 List of drawings

#### Drawings issued by the Employer

ENS Diagrams	 ENS Diagram -Cap Bank Regulator.pdf  ENS Diagram-DBK 22kV line.pdf  ENS Diagram-New 11kV Koria line.pdf  New Regulator point WSR 30.pdf
Stringing Charts	 Stringing Charts -Boesmans.xlsx  Stringing Charts -Koria line.xlsx
Design Drawings	 1743.pdf  1744.pdf  1746.pdf  1804.pdf  1848.pdf  1849.pdf  1870 B.pdf  0341.pdf  0351.pdf  1764.pdf  1747.pdf  1841.pdf  1873.pdf  1852.pdf  DFS15735S01 latest.pdf  1763.pdf  1847.pdf  1832 - Capacitor Bank.pdf  1833_C.pdf
Environmental Documents	 DESD for WSR and DBK MV linesrev0.pdf  Screening report DBK WSR MV line-M Moer rev0 June 2022.pdf  Koria Boesm EMP rev0 June 2022.pdf  GA 509 of NWA_Regs GenN 50%  Boesmanskop GA confirmation letter.pdf



### 3.26 Site Information

Give information about the *site* such as the ground conditions and any other information, which is likely to affect the *Contractor's* work such as limitations on access and the position of adjacent structures.

- a) The site is situated near Van Stadensrus town, approximately 150km from Bloemfontein.
- b) The area is flat with some undulating areas.
- c) The *contractor* to tender for normal soil or as specified, however a rate to be provided for the following soil types: Type 4 (very soft soil), Type 3 (soft to firm), Type 2 (very soft rock), Type 1 (soft rock) and Hard rock. No payments will be made if the before mentioned are not verified and confirmed by the appointed COW.
- d) Poles, Stays & Struts planted in type 3 and 4 soils to be installed according to Technical Instruction 06TI-019, as well as Technical Bulletin 06TB-035, dated 15 January 2007
- e) The *Contractor* is responsible to point out and negotiate with the local community a site for the camp.
- f) Access to the site is available via tar and dirt roads. If rained, the roads are slippery
- g) In townships access to stands may be restricted due to the presence of occupants, existing fences and other structures.
- h) No geotechnical report is attached.
- i) The *Contractor* is responsible to obtain information on typical weather conditions that can be expected on the site.
- j) Other services on site include water mains, which are not indicated on the layout drawings.
- k) The *contractor* prior, to construction should familiarise himself of all existing services e.g. underground cables, Telkom networks, sewerage and water pipes. The community and or local municipality to be contacted in this regard. The *contractor* to make provision for unforeseen damages to other services in the "Schedule of Prices" as he will not be compensated should any services be damaged.
- l)
- m) Water erosion trenches do appear from place to place.