



## NEC3 Engineering & Construction Contract

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

**and  
(Reg No. \_\_\_\_\_ )**

**for Partially supply & construction of 10.5km double  
circuit Koeberg/Dassenberg 132kV HV Line in the  
Western Cape Operating Unit**

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**CONTRACT No.**

## 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

### Offer

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

### Partially supply & construction of 10.5km double circuit Koeberg/Dassenberg 132kV HV Line in the Western Cape Operating Unit

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
	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:**

\_\_\_\_\_  
(Insert name and address of organisation)

Name &  
signature of  
witness

Date

Tenderer's CIDB registration number (if applicable)

<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*.

## 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

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

### 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.

#### For the tenderer:

#### 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

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

Clause	Statement	Data
1	<b>General</b>	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
	dispute resolution Option	<b>B: Priced contract with bill of quantities</b>
	and secondary Options	<b>W1: Dispute resolution procedure</b>
		<b>X1: Price adjustment for inflation</b>
		<b>X2: Changes in the law</b>
		<b>X7: Delay damages</b>
		<b>X15: Limitation of <i>Contractor's</i> liability for design to reasonable skill and care</b>
		<b>X16: Retention</b>
		<b>X18: Limitation of liability</b>
		<b>Z: <i>Additional conditions of contract</i></b>
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The <i>Employer</i> is (Name):	<b>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</b>
	Address	<b>Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg</b>
10.1	The <i>Project Manager</i> is: (Name)	<b>Shamiel Jacobs</b>
	Address	<b>ESKOM DISTRIBUTION PO BOX 222 BRACKENFELL 7560</b>
	Tel	<b>021 980 34 72</b>
	Fax	<b>N/A</b>
	e-mail	<b>jacobssh@eskom.co.za</b>
10.1	The <i>Supervisor</i> is: (Name)	<b>Howard Russo</b>
	Address	<b>ESKOM DISTRIBUTION</b>

**PO BOX 222  
BRACKENFELL  
7560**

Tel No.

**021 980 3951**

Fax No.

e-mail

**RussoH@eskom.co.za**

11.2(13)	The <i>works</i> are	<b>Partially supply and construction of new 10.5km 132kV double circuit sub transmission line on steel lattice and monopole structures from the last structure on the existing line to Koeberg substation;</b> <ul style="list-style-type: none"> <li>Perform all excavations, formwork to sides of excavations, backfilling and compaction of foundations,</li> <li>Perform one micro piling foundation for 132kV D/C Lattice tower.</li> <li>Supply and installation of reinforcing,</li> <li>Supply and casting of concrete foundations,</li> <li>Assemble and erecting of steel lattice and monopole structures including stringing double greased chickadee conductor and terminations for 10.5km 132kV double circuit sub-transmission line.</li> <li>Installation of twin OPGW/ADSS</li> </ul>	
11.2(14)	The following matters will be included in the Risk Register	<b>See Typical Risks on page 50</b>	
11.2(15)	The <i>boundaries of the site</i> are	<b>Koeberg/Dassenberg servitude line</b>	
11.2(16)	The Site Information is in	<b>Part 4: Site Information</b>	
11.2(19)	The Works Information is in	<b>Part 3: Scope of Work and all documents and drawings to which it makes reference.</b>	
12.2	The <i>law of the contract</i> is the law of	<b>the Republic of South Africa</b>	
13.1	The <i>language of this contract</i> is	<b>English</b>	
13.3	The <i>period for reply</i> is	<b>Two weeks</b>	
<b>2</b>	<b>The Contractor's main responsibilities</b>	<b>Data required by this section of the core clauses is provided by the Contractor in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.</b>	
<b>3</b>	<b>Time</b>		
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	<b>10 May 2022</b>	
11.2(9)	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 Foundations	As per construction

				programme
		2	Structures	As per construction programme
		3	Stringing including OPGW	As per construction programme
		4	Finishing/Handover/Commissioning	As per construction programme
30.1	The <i>access dates</i> are:	Part of the Site		Date
		1	Whole works	10 January 2022
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	At tender stage		
31.2	The <i>starting date</i> is	15 December 2021		
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	Four weeks		
35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.	[No data needed if this statement is included]		
4	Testing and Defects			
42.2	The <i>defects date</i> is	52 weeks after Completion of the whole of the <i>works</i> .		
43.2	The <i>defect correction period</i> is	Two weeks		
5	Payment			
50.1	The <i>assessment interval</i> is	1 Month after the start date and then in monthly intervals.		
51.1	The <i>currency of this contract</i> is the	South African Rand.		
51.2	The period within which payments are made is	As per Eskom payment terms listed against the vendor on the Eskom database.		
51.4	The <i>interest rate</i> is	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  (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 *mutatis mutandis* 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.

<b>6</b>	<b>Compensation events</b>	
60.1(13)	<p>The place where weather is to be recorded is:</p> <p>The <i>weather measurements</i> to be recorded for each calendar month are,</p> <p>The <i>weather measurements</i> are supplied by</p> <p>The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at:</p> <p>and which are available from:</p>	<p><b>On site (Dassenberg Substation)</b></p> <p><b>the cumulative rainfall (mm)</b></p> <p><b>the number of days with rainfall more than 20 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> <p><b>South African Weather Bureau</b></p> <p><b>As specified South African Weather Bureau</b></p> <p><b>the South African Weather Bureau and included in Annexure A to this Contract Data provided by the <i>Employer</i></b></p>
60.1(13)	<p>Assumed values for the ten year return <i>weather data</i> for each <i>weather measurement</i> for each calendar month are:</p>	<p><b>As stated in Annexure A to this Contract Data provided by the <i>Employer</i>.</b></p> <p><b>Note: If this arrangement is used, delete the rows above for 60.1(13) and delete this note.</b></p>
<b>7</b>	<b>Title</b>	<p><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></p>
<b>8</b>	<b>Risks and insurance</b>	
80.1	These are additional <i>Employer's</i> risks	<b>1. refer to "Typical Risks" page 50</b>
<b>9</b>	<b>Termination</b>	<p><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></p>
<b>10</b>	<b>Data for main Option clause</b>	

<b>B</b>	<b>Priced contract with bill of quantities</b>	
60.6	The <i>method of measurement</i> is	<b>Standard System of Measuring Builders Work (Sixth Edition Amended), Civil Engineering Standard Method of Measurement (Third Edition) and SANS, amended as stated in Part C2.1, Pricing Assumptions.</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	The <i>Adjudicator</i> is	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).
W1.2(3)	The <i>Adjudicator nominating body</i> is:	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.
W1.4(2)	The <i>tribunal</i> is:	arbitration.
W1.4(5)	The <i>arbitration procedure</i> is	the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	Within South Africa
	The person or organisation who will choose an arbitrator	
	- if the Parties cannot agree a choice or	
	- if the arbitration procedure does not state who selects an arbitrator, is	the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.
<b>12</b>	<b>Data for secondary Option clauses</b>	
<b>X1</b>	<b>Price adjustment for inflation</b>	
X1.1(a)	The <i>base date</i> for indices is	<b>The start date of the term contract.</b>
X1.1(c)	The proportions used to calculate the Price Adjustment Factor are:	<b>The prices will be fixed and firm rates for the first 12 months of the contract. At the anniversary date of the contract the prices will be adjusted by Contracts Management Services using the Consumer Price Index (CPI). The relevant publications to be used are published by Statistics South Africa.</b>
<b>X2</b>	<b>Changes in the law</b>	<b>There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.</b>
<b>X7</b>	<b>Delay damages (but not if Option X5 is also used)</b>	

X7.1	Delay damages for Completion of the whole of the <i>works</i> are	<b>R50 000 per day up to a limit of (No limit)</b>
<b>X15</b>	<b>Limitation of the <i>Contractor's</i> liability for his design to reasonable skill &amp; care</b>	<b>There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.</b>
<b>X16</b>	<b>Retention (not used with Option F)</b>	
X16.1	The <i>retention free amount</i> is	<b>R0.00</b>
	The <i>retention percentage</i> is	<b>10%</b>
<b>X18</b>	<b>Limitation of liability</b>	
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	<b>R0.0 (zero Rand)</b>
X18.2	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</b>
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to	<b>The greater of</b> <ul style="list-style-type: none"> <li>• the total of the Prices at the Contract Date and</li> <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) <b>plus the applicable deductible as at contract date.</b></li> </ul>
X18.4	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:	<b>the total of the Prices</b> other than for the additional excluded matters.  <b>The <i>Contractor's</i> total liability for the additional excluded matters is not limited.</b>  <b>The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for</b> <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,</li> <li>• loss of or damage to property (other than the <i>works</i>, Plant and Materials), <ul style="list-style-type: none"> <li>• death of or injury to a person and</li> <li>• infringement of an intellectual property right.</li> </ul> </li> </ul>
X18.5	The <i>end of liability date</i> is	<b>(i) <b>Seven</b> years after the <i>defects date</i> for latent Defects and</b>  <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</b>

matter.

A latent Defect is a Defect which would not 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.

<b>Z</b>	<b>The Additional conditions of contract are</b>	<b>Z1 to Z15 always apply.</b>
<b>Z1</b>	<b>Cession delegation and assignment</b>	
Z1.1	The <i>Contractor</i> does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the <i>Employer</i> .	
Z1.2	Notwithstanding the above, the <i>Employer</i> may on written notice to the <i>Contractor</i> cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.	
<b>Z2</b>	<b>Joint ventures</b>	
Z2.1	If the <i>Contractor</i> constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the <i>Employer</i> for the performance of this contract.	
Z2.2	Unless already notified to the <i>Employer</i> , the persons or organisations notify the <i>Project Manager</i> within two weeks of the Contract Date of the key person who has the authority to bind the <i>Contractor</i> on their behalf.	
Z2.3	The <i>Contractor</i> does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the <i>Employer</i> having been given to the <i>Contractor</i> in writing.	
<b>Z3</b>	<b>Change of Broad Based Black Economic Empowerment (B-BBEE) status</b>	
Z3.1	Where a change in the <i>Contractor's</i> legal status, ownership or any other change to his business composition or business dealings results in a change to the <i>Contractor's</i> B-BBEE status, the <i>Contractor</i> notifies the <i>Employer</i> within seven days of the change.	
Z3.2	The <i>Contractor</i> is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the <i>Project Manager</i> within thirty days of the notification or as otherwise instructed by the <i>Project Manager</i> .	
Z3.3	Where, as a result, the <i>Contractor's</i> B-BBEE status has decreased since the Contract Date the <i>Employer</i> may either re-negotiate this contract or alternatively, terminate the <i>Contractor's</i> obligation to Provide the Works.	
Z3.4	Failure by the <i>Contractor</i> to notify the <i>Employer</i> of a change in its B-BBEE status may constitute a reason for termination. If the <i>Employer</i> 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.

#### **Z4 Confidentiality**

- Z4.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.
- Z4.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Project Manager*.
- Z4.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.
- Z4.4 The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.
- Z4.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

#### **Z5 Waiver and estoppel: Add to core clause 12.3:**

- Z5.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Project Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

#### **Z6 Health, safety and the environment: Add to core clause 27.4**

- Z6.1 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.

- Z6.2 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.

**Z7 Provision of a Tax Invoice and interest. Add to core clause 51**

- Z7.1 Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer's* procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.
- Z7.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.
- Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer's* VAT number 4740101508 on each invoice he submits for payment.

**Z8 Notifying compensation events**

- Z8.1 Delete from the last sentence in core clause 61.3, "unless the *Project Manager* should have notified the event to the *Contractor* but did not".

**Z9 Employer's limitation of liability**

- Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)
- Z9.2 The *Contractor's* entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Employer's* liability under the indemnity is limited.

**Z10 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":**

- Z10.1 or had a business rescue order granted against it.

**Z11 Addition to secondary Option X7 Delay damages (if applicable in this contract)**

- Z11.1 If the amount due for the *Contractor's* payment of delay damages reaches the limits stated in this Contract Data for Option X7 or Options X5 and X7 used together, the *Employer* may terminate the *Contractor's* obligation to Provide the Works using the same procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table.

**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.

### 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 44 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 44 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.

## **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 20mm	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

### • Part two - Data provided by the *Contractor*

○	○ <b>Statement</b>	○ <b>Data</b>
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: Responsibilities: Qualifications: Experience:	CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .
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:	

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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:	

**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

### 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.

### 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.

### 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.

## Measurement and payment

### 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)

### General assumptions

Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.

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.

An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*.

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.

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.

**Departures from the *method of measurement***

**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*

Use this page as a summary page or as a cover page to the *bill of quantities*.

## PART 3: SCOPE OF WORK

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

## C3.1: EMPLOYER'S WORKS INFORMATION

### 1 Description of the works

This project shall be carried out fully in accordance with this Works Information, the referred technical specifications, relevant drawings and documentation supplied by Eskom.

This project shall conform in all instances to the Occupational Health and Safety Act, and regulations (Act No. 85 of 1993) and any amendments thereto, including the safety specifications. In terms thereof, the appointed contractor is to provide a Health and Safety Plan to comply with the Occupational, Health and Safety Act and Regulations, (Act No. 85 of 1993), based upon but not limited to the Health and Safety Specification in Part 1.2.7, Annexure H.

The Contractor shall use the final Geotechnical Investigation and proposed foundation report for the new 132KV double circuit Line between Koeberg – Dassenberg substations. as a reference to develop an alternative piling system. The extent of the work shall be as indicated on the route plans, surveyed line profiles and tower schedules.

The project is located in the Western Cape, between Atlantis and the Koeberg Nuclear Power Station. The general topography and vegetation of the area is relative uniform with not much variance over the entire route. The general topography could be described as typical windblown sand dune area with the vegetation being classified as a Cape Peninsula fynbos with Port Jackson bush. The proposed new line will be installed within an existing Eskom servitude already being utilized for overhead bulk supply infrastructure. The general gradients of the route do not vary considerably and could be classified as flat to very slightly falling towards the West.

#### 1.1 Project Scope of Work:

Partially supply and construction of new 10.5km 132kV double circuit sub transmission line on steel lattice and monopole structures from the last structure on the existing line to Koeberg substation;

- Perform all excavations, formwork to sides of excavations, backfilling and compaction of foundations,
- Perform one micro piling foundation for 132kV D/C Lattice tower ,
- Supply and installation of reinforcing,
- Supply and casting of concrete foundations,
- Assemble and Installation of steel lattice and monopole structures including stringing double greased chickadee conductor and terminations for 10.5km 132kV double circuit sub- transmission line.
- Installation of OPGW/ADSS

The new Dassenberg Koeberg 132kV double circuit line is about 10.5km long with two T-off lines strung into the Atlantis substation. Approximately 2.5 km of the line from Dassenberg substation including the T-off lines to Atlantis substation has already been constructed and strung. The scope of this contract is to construct monopole/lattice structures of the remaining 13.4km line to Koeberg substation, consisting of 42 lattice towers, 4no A-frame structures and 5no monopole structures.

The contract comprises the provision of labour, material, tools, transportation, instrumentation and all things necessary to install and construct the permanent works in accordance with the contract drawings and to the quality standards set in the contract specifications, inclusive of material and performance tests where these are specified.

## 1.2 Construction / Execution Plan

Upon award of contract, the Contractor shall submit to the Project Co-ordinator a detailed execution plan for the installation of HV line. An execution plan shall be a document containing:

- A detailed construction sequence,
- Material, plant and labour requirements at each construction stage, and
- Other information relevant to the construction activities.

Specifications:

The following information will be provided:-

- Drawing: 0.69/247A/1 rev1
- Drawing: 0.69/247B/1 rev 0
- Drawing: 0.69/247C/1 rev 0
- Drawing: 2022/244F/1 rev 0
- Geotechnical report: Final Geotechnical Investigation and Proposed Foundation Report for the New 132KV Double Circuit Line Between Koeberg – Dassenberg Substations, Western Cape.

## 1.3 Site Investigation

A detailed project specific geotechnical investigation has been carried out and a report issued. The geotechnical investigation report will be provided as part of the Contract documents.

The Contractor will be deemed to have studied the geotechnical data and /or made due allowance in his Tender for carrying out the works as necessary in the prevailing site conditions, and any other variations in the ground conditions that can be expected from geological records, etc. If the subsoil conditions prove to be different from those shown, or if such conditions are suspected, the Contractor shall notify the Project Co-ordinator immediately.

No claims for additional costs arising from varied soil conditions will be allowed for.

### Surveying, Pegging and Setting Out

The line route has been established and the necessary servitude rights have been obtained by the employer (Eskom). The employer has established all the relevant peg positions for the structures in accordance with the design. The centre of all structures and central point of each leg excavation has been pegged. Such pegs are to be utilised by the appointed contractor to set out the required stub positions as well as the necessary excavation holes.

The appointed contractor will be provided with a list of co-ordinates for each structure position. In the event of any pegs not being found due to removal thereof or location problems, the employer can be contacted. In any event, the positions of these pegs are to be checked by the appointed contractor.

### Earthing

The structures (foundation stubs) are to be earthed in accordance with Eskom Distribution Earthing standard, SCSASABF9 latest revision and the onus remains with the appointed contractor to achieve the necessary footing resistances required in terms thereof.

The tower stubs are to be earthed by the appointed contractor by means of connecting a flexible earth conductor between the tower stub and its foundation reinforcing steel. This may be achieved by crimping a lug onto one end of the conductor and bolting it onto the stub within the foundation concrete. The other end of the conductor is to be bolted onto the vertical reinforcement steel by means of a Crosby clamp. Refer to drawing DWC-7600-04-04- latest revision for details.

The two 244F terminal towers at Koeberg Power station are to be bonded to the substation earthmat by connecting the two nearest tower legs thereto by means of 50x3mm flat copper straps, as per the requirements in the abovementioned standard.

The appointed contractor shall record the footing resistances of each tower and submit these results to the Project Engineer for approval.

## **1.1. Environmental**

### **1.1.1. General**

All activities related to the establishment of power line construction and design implementation should be undertaken in accordance with the Eskom Safety, Health, Environment and Quality (SHEQ) policy. The environmental management during construction activities is to ensure that the Environmental Impact Assessment (EIA) recommendations, Environmental Authorization (EA) conditions, Environmental Management Plan (EMP), landowner special conditions and all relevant environmental legislation are implemented, by monitoring the site works and regular reporting.

### **1.1.2. Supervision**

The contractor shall provide all necessary site supervisor during the execution of the construction works. The appointee should be competent and authorized and shall be approved in writing by the Project Manager. The supervisor must be at all times being on site when the construction works activities takes place. The contractor shall appoint competent, efficient, and qualified personnel to perform construction works. Eskom shall have authority to require the contractor to remove any incompetent persons from site.

### **1.1.3. Precautions against damage.**

- a) The contractor shall adhere to applicable legislation to protect life and property in connection with the construction works.
- b) The contractor shall comply with the condition addressed by the landowner in the negotiated option.
- c) The contractor shall comply with the condition in the EMP during construction.
- d) The contractor shall provide suitable waste bins at any point of works.
- e) The contractor shall be liable for any damage done by the workforce and be repaid immediately.
- f) If there is any agreement made by the landowner and the contractor must be in writing and submitted to Eskom site representative on site within 48 hours.
- g) Any environmental incident or accident during the works must be reported to Eskom site representative.

## **1.2. Sanitation**

The contractor shall provide portable toilet facilities for the use of the workforce at all work sites.

## **1.3. Wildlife**

- a) It is illegal to interfere with any wildlife, fauna or flora as stipulated in the Environmental conservation Act No 73 of 1989.
- b) When stipulated in the EMP, two different coloured bird diverters shall be fitted along the indicated spans. The utilization of bird flight diverters on Eskom overhead lines standard No (240-93563150) section 5.2 shall be used for installation.

## **1.4. Access**

- a) The contractor and ECO shall negotiate with each landowner the access to reach the servitude and tower position. The access agreement will be formalized in the form "TPL 004/005 – Property Access details" and signed by the three parties. The contractor will mark the proposed route and/or a competent representative will accompany the equipment when opening the access. Any deviation from the written agreement should be closed and re-vegetated immediately.

- b) The contractor shall signpost the access roads to the tower positions immediately after the access has been negotiated.

#### **1.4.1. Use of existing roads**

- a) Maximum use of both the existing servitudes and the existing roads shall be made. In circumstances where private roads must be used, the condition of the said roads must be recorded prior to use and the condition thereof agreed by the landowner, the Eskom site representative and the contractor.
- b) All private roads used for access to the servitudes shall be maintained by the contractor and upon completion of the construction works, be left in at least the original condition.
- c) Access shall not necessary be continuous along the line, and the contractor must therefore familiarize him/herself with the physical access restrictions such as rivers, railways, motorways, mountains etc., along the line.
- d) Access is to be established by vehicles passing over the same track on the natural ground, multiple tracks are not permitted. Access roads shall only be constructed where necessary at watercourse, on steep slopes or where boulders prohibit vehicular traffic.
- e) Where the Eskom site representative deems that damage to the access road is irreparable, the contractor shall use alternative construction methods compatible with the access and terrain as agreed with the project Manager
- f) Existing water diversion berms are to be maintained during construction and upon completion be repaired as instructed by the Eskom site representative.
- g) Where access roads have crossed cultivated farmlands, the lands be rehabilitated by ripping to a minimum depth of 600mm.

#### **1.4.2. Construction of new roads**

- a) Where construction of a new road has been agreed, the road width shall be determined by need such as equipment size, and shall be no wider than necessary.
- b) In areas over 4% side slopes, roads may be constructed to a 4% out slope. The road shall be constructed so that material will not be accumulated in one pile or piles, but distributed as evenly as possible. The material shall be side-cast as construction proceeds, and shall not be side-cast so as to make a barrier on the downhill side. The cut banks shall not overhang the road cut, and shall if necessary be trimmed back at an angle which would ensure stability of the slope for the duration of the works. The sides or shoulders of roads shall not act as a canal or watercourse.
- c) Water diversion berms shall be built immediately after the opening of the new access road. In addition, water outlets shall be made at intervals where berms are installed, and suitably stone pitched if instructed by the Eskom Site Representative.
- d) No cutting and filling shall be allowed in areas of 4% side slope and less.
- e) Existing land contours shall not be crossed by vehicles and equipment unless agreed upon, in writing, by the landowner and the Eskom Site Representative.
- f) Existing drainage systems shall not be blocked or altered in any way.

#### **1.4.3. Closure of roads**

- a) Upon completion, only roads as indicated by the Eskom Site Representative shall be closed.



- b) In areas where no cut or fill has been made, barriers of earth, rocks or other suitable material shall affect closure.
- c) In areas 30 % slope and less, the fill of the road shall be placed back into the roadway using equipment that does not work outside the road cut (e.g. back-hoe). In areas of greater than 30 % slope, the equipment shall break the road shoulder down so that the slope nearly approximates to the original slope of the ground. The cut banks shall be pushed down into the road, and a near normal side slope shall be re-established and re-vegetated.
- d) Replacement of earth shall be at slopes less than the normal angle of repose for the soil type involved.

#### **1.4.4. Construction of water diversion berms**

- a) Water diversion berms shall be spaced according to Annex C of TRMSCAAC5.2 standard.
- b) Where the in-situ material is unsuitable for the construction of water diversion berms, alternative methods of construction must be investigated and proposed by the Contractor and submitted to the Project Manager for acceptance.
- c) Borrow pits - The Contractor's decision as to the location of borrow pits, shall be at the Eskom Site Representative's acceptance. The Contractor shall be responsible for the rehabilitation and re-vegetation of the borrow pits. It is the Contractor's responsibility to negotiate the royalties for the borrow pits with the landowner.

#### **1.4.5. Levelling of tower sites**

- a) No levelling at tower sites shall be permitted unless approved by the Eskom Site Representative.
- b) The steep slopes formed by the cut banks and respective fillings when building the tower platforms are to be trimmed back to an angle that ensures stability of the slope. When the ground is loose, berms are to be built on the top of the slope; 2m long logs spaced evenly must be pegged across the down-slope, re-vegetated with appropriate local grass seeds together with fertilizer.

### **1.5. Gates**

#### **1.5.1. General**

- a) Attention is drawn to the Fencing Act No. 31 of 1963 as amended, in particular with regard to the leaving open of gates and the dropping of fences for crossing purposes, climbing, and willful damage or removal of fences.
- b) At points where the line crosses any fence in which there is no suitable gate within the extent of the line servitude the Contractor is to, on the Eskom Site Representative's instruction, provide and install a servitude gate as detailed in the relevant drawing. The Contractor will mark these crossing points when the tower positions are being pegged.
- c) Where applicable game gates are to be installed in accordance with the relevant drawing.
- d) All 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 them. No construction work shall be allowed to commence on any section of line, unless all gates in that section have been installed. Installation of gates in fences on major road reserves shall comply with the ordinances of the relevant Provincial Authority. No gates may be installed in National Road and Railway fences.

#### **1.5.2. Installation of gates**

- a) Care shall be taken that the gates shall be so erected that a gap of no more than 100mm to the ground is left below the gate.
- b) Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill shall be provided beneath the gate.
- c) The original tension is to be maintained in the fence wires.
- d) 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 animals. The extent of the replacement shall be on the Eskom Site Representative's instruction.
- e) Where existing servitude gates are used, they must be refurbished to the latest standard for gates as per the latest approved gate drawings.

### **1.5.3. Securing of gates**

- a) The Contractor shall ensure that all servitude gates used by him are kept closed and locked at all times.
- b) The Contractor shall provide locks for all servitude gates, and when the line is taken over these locks shall be recovered by the Contractor and replaced by locks supplied by the Eskom. The Contractor shall also ensure that all existing farm gates used by him are kept closed. The Contractor shall provide the Eskom Site Representative with keys for the above locks. No keys shall be provided to landowners to avoid conflict situations between neighboring landowners.

## **2. Line Survey**

### **2.1. Plans and Profiles**

The route of the line will be surveyed by Eskom, who will provide all necessary route plans and templated profile drawings, on which, tower types and the position thereof will be indicated.

Position of aircraft warning spheres, bird guards, bird flights diverters and other site-specific environmental considerations will be indicated on the construction profiles.

### **2.2. Setting – out of route**

The line route will be set-out by Eskom prior to the commencement of construction.  
During foundation installation, the Contractor is to cast the bend pegs in position with concrete.

### **2.3. Survey by the contractor**

- a) The pegging of tower positions, and where necessary, the establishing of self-supporting tower leg extensions and guy anchor positions for guy towers, shall be carried out by registered surveyors.
- b) The Contractor, on completion of each 20 km or suitable section of the line, is to supply records of all distances measured for each individual tower position. These should agree with the profiles, and any discrepancy reported immediately to the Design Engineer via the Project Manager.
- c) It is the Contractor's responsibility to inform the Eskom Site Representative immediately, should
  - 1) There be any discrepancy between the topography shown on the profiles and the actual ground;
  - 2) errors be found, for example where a tower position is physically in "lands" and the profile states "no-tower zones";
  - 3) Any new or existing features or other services either above or below the ground be found and which are not reflected on the line profiles. This includes land use, roads, telephone or

power lines and pipelines/irrigation equipment which may adversely affect tower positions and/or statutory clearance requirements.

- 4) The Contractor, in his opinion, finds that the site chosen is not suitable for a tower position, or the tower type indicated on the profiles is not suitable for the tower position e.g. excessive side slope.
- d) It is the Contractor's responsibility to ensure that the surveyor is familiar with the limitations and restrictions of the tower types and construction methods used.

## **2.4. Pegging by the contractor**

### **2.4.1. Setting out of angle towers**

All angle towers shall be positioned in such a way that the centre phase conductor is on the centre line of the servitude. Off-setting of towers may be required to achieve this. The amount of off-set can be obtained from the relevant tower drawings or by calculation.

It is the Contractor's responsibility to ensure that accepted survey methods are used, and that checks are done to ensure the correct placing of towers.

## **3. Foundations**

### **3.1. Design and Geotechnical**

#### **3.1.1. Foundation design loads**

All foundations shall be designed to the ultimate load as per the relevant line/project standard. It is the Contractor's prerogative to use Eskom-issued standard foundation and the drawings will be provided.

#### **3.1.2. Soil/rock – Foundation nomination**

Eskom will provide a Geotechnical report detailing the type of soil and foundation nominated for each tower position. The contractor shall also study the report familiarize him/herself with the soil specifications.

### **3.2. Concrete and grouts**

#### **3.2.1. General**

- a) Concrete mix designs shall be proportioned to obtain a specified strength of 25MPa, and a target strength of 35MPa, with a minimum cement: water ratio of 1.8 : 1 as per SANS 10100-2. No more than one individual 28 day concrete test cube result from the 3 cube batch shall fall more than 3MPa below the minimum specified strength. For moderate to severe conditions the mix design shall comply with SANS10100-2 where the minimum cement content shall be 340 kg/m<sup>3</sup> CEM II or CEM I cement with extenders.
- b) Grout mix designs for rock anchors shall be proportioned to attain a specified strength of 35MPa at 28 days with any expansive additives included. The use of epoxy grouts will only be allowed after acceptance by the Design Engineer.
- c) Water shall be of a potable quality, clean and free from all earthy, vegetable or organic matter, acids or alkaline substances in solution or suspension.

### **3.3. Construction of foundations**

The first installation of each foundation per soil type shall be witnessed by the Design Engineer. No concrete may be placed before the inspection of the excavation, reinforcing, stubs or link positions, have all been checked by the Eskom Site Representative. The Eskom Site Representative shall take photos before concrete placing and then during the backfilling. These photos shall be submitted on a regular basis to the Eskom Project Manager and the Eskom Design Engineer.

The Contractor shall supply all concrete and concrete materials required for construction, including aggregates, cement, water, admixtures (if any), shuttering, reinforcing steel, and materials for curing concrete.

### **3.3.1. Excavation**

- a) At each tower or pole position, the Contractor shall excavate. Excavation in this instance shall be the removal of soil/rock by any accepted means for the purpose of constructing a particular foundation system, including conventional pad and pier type foundations, spread footings, piles, anchors, etc.
- b) The excavated top soil shall be kept separate from the subsoil
- c) Excavations shall be made to the full foundation dimensions required, and shall be finished to the prescribed lines and levels. The bottom or sides of excavations upon or against which concrete is to be poured shall be undisturbed for type 1 and type 2 soils. If, at any point in excavation, the natural material is disturbed or loosened or over excavated, the over-excavations shall be backfilled with 10MPa concrete, including the application of a blinding layer at the base of foundations where these eventualities are likely to occur during the construction process. Soil backfilling will not be accepted.
- d) When the material at foundation depth is found to be partly rock or incompressible material, and partly a soil or material that is compressible, all compressible material shall be removed for an additional depth of 200 mm and backfilled with 10MPa concrete "reimbursable as per to the bill of quantities".
- e) The excavations shall be protected so as to maintain a clean subgrade until the foundation is placed. Any water, sand, mud, silt or other objectionable material which may accumulate in the excavation including the bottom of pile or anchor holes, shall be removed prior to concrete placement.
- f) Excavations for cast-in-situ concrete, including pile caps cast against earth, shall be concreted within seventy-two hours after beginning the excavations. In addition to this general requirement, pile and/or anchor holes that are not adequately protected against the elements, must be corrected and be acceptable to the Eskom Site Representative. Soil excavations that remain un-concreted longer than seventy-two hours shall, be required to be enlarged by 150 mm in all sides/directions.
- g) The excavations shall be kept covered or barricaded in a manner accepted by the Eskom Site Representative to prevent injury to people or livestock. Plastic danger tape shall be added to barricade for visual purposes. Failure to maintain proper protection of excavations may result in the suspension of excavation work until proper protection measures have been restored.
- h) The Contractor is to notify the Eskom Site Representative upon completion of the excavation for the foundations. No concrete is to be placed until the excavation; shuttering and reinforcing steel have been inspected and accepted in writing by the Eskom Site Representative.

### **3.3.2. Placing of reinforcing steel**

- a) The Contractor shall install all the reinforcing steel required for foundations. Reinforcing steel shall be fabricated and bent in strict accordance with the drawings and SANS 82.
- b) Reinforcing steel, before being positioned, shall be thoroughly cleaned of mill scale and any coatings that will destroy or reduce bond.
- c) Reinforcing steel shall be accurately positioned and secured against displacement during placing and vibrating of concrete.
- d) Reinforcing bars shall be tied at all intersections with no less than No.18 gauge annealed wire.

- e) Reinforcing bars shall be overlapped forty-five diameters at all splices, unless shown otherwise on the drawings.
- f) Reinforcing bars shall be provided and placed as detailed on the foundation drawings. Unless otherwise shown on the drawings, the minimum cover to the main reinforcing bars in a pile, a pile cap, or chimney shall be 50 mm and 75 mm for the sides, and bottom of the slab or anchor.
- g) Use of suitable accepted spacers or supports shall be made, to ensure that the minimum concrete cover to the reinforcement is maintained during the placement of concrete.
- h) Where cover blocks are used to support the lower layers of reinforcing, these shall be at least 75 mm thick to make allowance for the uneven ground surface on which the reinforcing cage rests.
- i) Cover blocks are to be made of minimum 25MPa concrete.

### **3.3.2. Placing of embedded items**

- a) The Contractor shall install all required embedded items prior to placing (pouring) of concrete.
- b) Structural steelwork or holding down bolts shall be accurately positioned and securely held in place during the placement (pouring) of concrete.
- c) Angle stubs may be supported on the bottom of excavations by either precast concrete slabs set at the correct level by placing suitable grout or concrete underneath it, or on a previously placed blinding layer of 10MPa concrete installed up to the correct level.
- d) The precast slab shall be square in plan with a side dimension of 300 mm, and a depth of 75 mm, and shall be constructed using reinforced concrete with a minimum characteristic strength of 25MPa.
- e) The placing of loose rubble, stones, bricks, etc. under the precast slab will not be acceptable.
- f) The contractor shall place form work with suitable material before pouring the concrete

### **3.3.3. Placement of concrete**

- a) During the concrete operations, the concrete mixture shall be tested for each batch by the Contractor to determine the slump of the fresh concrete in accordance with SANS Method 5862.
- b) Records of slump tests shall be supplied to the Eskom Site Representative on a daily basis.
- c) Test cubes shall be prepared, in accordance with SANS Method 5863 at the initiation of the concrete placement of each truck/batch for the first three batches and twice every day that concrete is batched thereafter or for every 20 cubic meters where this amount is exceeded.
- d) Pour the concrete with suitable test and quality checks have been conducted and agreed upon with the Eskom site representative.

### **3.3.4. Backfilling**

- a) The Contractor shall backfill each excavation with suitable material.
- b) In backfilling, the pad of the foundation shall be covered, first with a 200 mm layer of well-graded material containing no pieces larger than 20 mm, before any coarse material is deposited.
- c) The material shall be mechanically compacted to a minimum of 90% of the dry density of the undisturbed material.
- d) The surface of the backfill around the foundation shall be carried to such an elevation that water will not accumulate on top of the backfilled area.

- e) Material removed from the excavation, which is either not suitable or not required for backfill, shall be spread evenly over or adjacent to the site, or be disposed of as directed by the Eskom Site Representative. Spreading of subsoil in agricultural areas will not be allowed. Excavated soil suitable for backfill will be returned to the excavation by backfilling with the subsoil first and the top soil last.
- f) Structural steelwork or anchor bolts shall be embedded such that the top of the concrete of the foundation correctly coincides with the designed level.

#### **4. Towers**

##### **4.1. Tower designs**

- a) The Employer will provide tower drawings (including but not limited to analysis, member selection, bolt requirements etc.); it shall remain the responsibility of the Contractor to verify such drawings are to his satisfaction.
- b) Although the Employer took all necessary measures to confirm the accuracy and completeness of all tower drawings, it remains the responsibility of the Contractor to report any inadequacies.
- c) Changes in tower configurations shall be reviewed and accepted by the Employer prior to manufacture to ensure acceptability of any changed configuration.

##### **4.2. Tower Erection**

The contractor shall supply detailed safe work procedures (for each tower type to be used on the project) of tower assembly, erection and dressing in accordance with the guidelines provided in the Line Specification.

###### **4.2.1. Tower material and handling**

The contractor shall insure that:

- a) The tower steel in storage shall be supported off the ground with a sufficient number of blocks to prevent bending or warping of individual members.
- b) Tower steel shall be handled with the use of nylon or fabric slings. The use of unprotected wire rope slings is not permitted.
- c) Material shall not be dumped or dropped from trucks, but shall be carefully unloaded and stacked.
- d) Material shall not be dragged on the ground.

###### **4.2.2. Tower assemble and erection**

- a) The applicable type of tower shall be erected on the completed foundation.
- b) Towers shall not be erected until the foundation concrete had at least 14 days to cure and the concrete 7 day cube strength tested above 15MPa, the minimum 7 day cube strength requirement.
- c) Before any tower dressing can commence the tower must have been inspected and signed off by either the Eskom Site Representative or Design Engineer, indicating that the assembly and erection has been done in accordance with the relevant tower drawing(s) and method statement(s).

#### **5. Stringing**

##### **5.1. Material supply**

- a) The Employer will provide all "free issue" material to the Contractor in order to complete construction of the project.
- b) Quantities and delivery shall be as per the agreed schedules between Employer and Contractor.

## **5.2. Handling and stringing of conductor**

To have better quality control on stringing, the contractor must submit a schedule of how he intends stringing the strain sections and give locations of puller and tensioner used for the Eskom Design Engineer to review for acceptance.

- a) All phase and earth conductors shall be tension strung using the accepted sag and tension tables for the relevant phase and earth conductor(s).
- b) The equipment and methods used for stringing the conductors shall be such that the conductors will not be damaged. Particular care shall be taken at all times to ensure that the conductors do not become kinked, twisted or abraded in any manner.
- c) Stringing shall be done in daylight hours only.
- d) The Contractor shall make suitable arrangements for temporary staying of towers, and anchoring of conductors when necessary. Installation and removal of temporary anchors will be the Contractor's responsibility.
- e) Matched conductor drums, marked with the same number followed by the suffix A, B, C etc., shall be used for each pull of multiple conductors per phase to ensure even sag characteristics and a minimum number of joints. The Contractor shall select the most suitable sets of matched conductor drums for each stringing position to minimize wastage of conductor. The Contractor shall keep an accurate record of the phase and earth conductor drum numbers and their position in the line. On Completion a copy of these records shall be supplied to the Design Engineer and Eskom Site Representative.
- f) Where multiple conductors per phase are used, these shall be attached to a single running board and strung simultaneously to ensure matched sags. The individual conductors shall be attached to the running board by auxiliary clamps that will not allow relative movement of strands or layers of wire, and shall not over tension or deform individual wires.

### **5.2.1. Joints**

- a) Before stringing commences, the Contractor will be required to compress sample phase and earth conductor mid span joints, as well as phase conductor dead/end assemblies on site in the presence of the Eskom Site Representative, using the matched and numbered dies and compressors intended to be used on the line during stringing.

### **5.2.2. Clamping of conductors**

- a) The conductors and earth conductors shall be clamped-in by the Contractor after the Eskom Site Representative has accepted the regulating operation as being in full compliance with the standards and stringing data. Where offsets are required, the conductors shall be accurately adjusted in accordance with the offset clamping information developed by the Contractor.

### **5.2.3. Installing Vibration dumpers**

- a) Where vibration dampers are specified, the Contractor shall install at each suspension and strain point.
- b) Vibration dampers shall be installed when clamping the conductor, but only after the conductor has been securely fastened in the conductor support assembly.
- c) On lines employing more than one conductor per phase, spacers or spacer-dampers, shall be installed to separate the individual conductors of each phase.
- d) Conductor spacers or spacer dampers shall be installed immediately after clamping the conductors, but in no instance shall conductors be allowed to remain without spacers installed for longer than seventy-two hours after clamping.



#### **5.2.4. Installing Jumpers**

- a) The jumpers shall be formed to provide the maximum amount of clearance from earthed hardware, and tower steelwork. Their positioning shall comply with the clearances stated under the specified displacements.
- b) The Contractor shall supply labour and equipment to assist the Eskom Site Representative in measuring clearances from jumpers to earthed hardware if requested.
- c) Jumpers not meeting the required clearances shall be removed and replaced.

#### **5.3. Stringing OPGW**

In general the stringing of OPGW is the same as for the earth wire but the relevant installation standard for OPGW need to be adhered to.

#### **6. As built documentation**

The latest As Built Specification should be adhered to. On completion of construction the contractor, in conjunction with the project manager, is required to compile the final as built document as per the requirements outlined below.

##### **a) Contractor details**

- List of Sub-Contractors and their scopes of work.

##### **b) Foundation and Tower Schedules**

- Soil Profiles and Foundation Norminations Checking Lists
- Earth Resistance Checking Lists (Must include recording of soil and weather conditions)
- Tower Assembly and Erection Checking Lists

##### **c) Stringing Records**

#### **OPGW Installation**

- OPGW Schematic Layout
- Colour Coding and Numbering
- Power Meter Results and OTDR Reports
- Splice Performance Summary
- Power Line Carrier Frequencies
- Joint Box Positions
- Assembly Drawings
- OPGW Specification

Electrical line parameters (measurements to be carried out as per specification 474-9428 – transmission line impedance measurement specification)

##### **d) Drawings**

- Foundation Drawings
- Tower Outline Drawings
- Hardware Drawings and OPGW Hardware
- Manufacturers Insulator Drawings (compare with maximum size from assembly drawings)
- Grading Rings

##### **e) Hardware**

- Mid span Joints
- Spacers/Spacer Dampers (Include Drawing)



- Assembly Drawings
- Insulated Earth Wire Assemblies and Non-Standard Assemblies
- Damping Devices
- Miscellaneous Items (Aircraft warning spheres, bird diverters, warning lights, etc.)
- Hardware Type/Sample Test Results
- Hardware Problems and Non-Conformances during Construction (Fitment issues, failures, etc.)
- On-site conversions to cater for special requirements

#### **f) Line Profiles**

Incidents, near-misses, accidents and fatalities Aerial Laser Scan (AS-BUILT LIDAR) HD Visuals and Corona Checks from Flyover (Crossings) Line walkdown and Line Audit (Ticksheet) – Including Galvanometer results etc OBTAINED FROM THE DESIGN LEADER

Latest as-built profiles, staking table with corresponding as-built tower numbers.

#### **g) Handover Certificates**

Permits

- Statutory Permits
- EMP Permits
- Major Incident Reports
- Non-Conformance Reports
- Concessions

#### **References**

##### **South African National documents**

OHSACT & REGULATIONS	Act 85 of 1993
Fencing Act	Fencing Act No 31 of 1963 as amended.
SAISC	South African steel construction handbook
NEMA	National Environmental Management Act No. 107 of 1998
ECCS	Recommendations for angles in lattice transmission towers, No. 39.
SANS 282	Bending dimensions of bars for concrete reinforcement.
SANS 1089:1991	Round wire concentric lay overhead electrical stranded conductors
SANS 471:1971	Portland cement (ordinary, rapid-hardening and sulphate-resisting).
SANS 60815-1:2009	Selection and dimensioning of high voltage insulators intended for use in polluted conditions
SANS 626:1971	Portland blast furnace cement.
SANS 675:2009	Zinc-coated fencing wire.
SANS 121:2011/ (ISO 1461:2009)	Hot dip galvanised coatings on fabricated iron and steel articles- specifications and test methods
SANS 831:1971	Portland cement 15 (ordinary and rapid hardening).

SANS 920:1985	Steel bars for concrete reinforcement.
SANS 1083:1976	Aggregates from natural sources.
SANS 1491-1:1989	Portland cement extenders, Part 1: Ground granulated blast furnace slag.
SANS 1491-2:1989	Portland cement extenders, Part 2: Fly ash.
SANS 1491-3:1989	Portland cement extenders, Part 3: Condensed silica fume.
SANS 1466:1988	Portland fly ash cement.
SANS 2001-CC1:2012	Concrete works (structural)
SANS 2001-CC2:2012	Concrete works (Minor works)
SANS 10100-1:1992	The structural use of concrete. Part 1: Design.
SANS 10100-2:1992	The structural use of concrete, Part 2: Materials and execution of work.
SANS 10144:1978	Detailing of steel reinforcement for concrete.
SANS 10162-1:1993	The structural use of steel, Part 1: Limit-state design of hot-rolled steelwork.
SANS 10162-2:1993	The structural use of steel, Part 2: Limit-states design of cold-formed steelwork.
SANS 10162-3:1993	The structural use of steel, Part 3: Allowable stress design steelwork.
SANS 10280-1:2013	Overhead power lines for conditions prevailing in South Africa
SANS 5861-1 to 4: 2006	Concrete Tests: Making, mixing Curing and sampling
SANS 5862-1 to 4: 2006	Slump of freshly-mixed concrete.
SANS 5863 : 2006	Compressive strength of concrete (including making and curing of the test cubes).
SANS 61089 IEC:	Round wire concentric lay overhead electrical stranded conductors
Agriculture Bulletin 399	Department of Agriculture Bulletin No. 399 ISBN0621082589, A primer on soil conservation.
SANS 50025 parts 1 to 6	Hot rolled products of structural steels
SANS 1200 A to F series	Civil Engineering Construction Aspects

### **Eskom National Documents**

- 32-9: Definition of Eskom documents.
- 32-644: Eskom documentation management standard.
- 474-65: Operating Manual of SCOT

474-285 Specification for anti-theft measures

474-9428 Line Impedance measurements

32-247 Procedure for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land.

TSP 41-604 Design, manufacturing and installation specification for transmission line labels

TST41-321 Earthing of transmission lines.

NRS 061-2:2004 Specification for overhead ground wire with optical fibre.

NWS 1074 Guy strand grips for transmission lines

NWP 3402 Power lines in the vicinity of aerodromes and hazards to aircraft

SHEQ Eskom SHEQ policy

### **International documents**

ASCE Manual 1097 Guide for design of steel transmission towers

IEC 60826:2003 Design criteria for overhead transmission lines

DIN EN ISO 898-1 1999: Mechanical properties of fasteners made of carbon steel and alloy steel.  
Part1: Bolts, screws and studs

### **Specifications**

Title	Doc No.	Date or revision	Tick publicly available if
<b>Safety and ORHVS Standards</b>			
Health and Safety Standard for Contractors and Subcontractors working for Eskom	<b>34-333</b>	Latest Revision	Attached
Construction Safety, Health, and Environmental Management	<b>32-136</b>	Latest Revision	Attached
Working at height	<b>32-418</b>	Latest Revision	Attached
Assessment Procedure for Authorisation	<b>34-145</b>	Latest Revision	Refer to IARC
Authorisation Standard for operating on HV Systems	<b>34-146</b>	Latest Revision	Refer to IARC
Supervision of People in Electrically Hazardous Locations	<b>34-1954</b>	Latest Revision	Attached
Working Clearances at MV structures with pole-mounted auxiliary equipment	<b>DISREAAH3</b>	Latest Revision	Refer to IARC
Inspection Check sheets		Latest Revision	Attached
Standard for a Fall Arrest System	<b>DISASABW3</b>	Latest Revision	Refer to IARC
Technical Instruction – Prohibition Notice: Ref. No. IOSS 2074-003	<b>03 TI – 016</b>	Latest Revision	Refer to IARC
Technical Instruction – Substation Dead Work	<b>11 TI – 019</b>	Latest Revision	Attached
Technical Instruction – Substation Live Work	<b>11 TI – 020</b>	Latest Revision	Attached
Occupational Health & Safety Act AND regulations (Act 85 of 1983)		Latest Revision	Publicly available

<b>The Following Documents will form part of the Portfolio of Evidence with regards to ORHVS Authorisation :</b>				
Standard for the use of Equipotential Footplates	<b>SCSASAAU5</b>	Latest Revision	Refer IARC	to
Routine Inspection and Maintenance of Sub-transmission and Reticulation Lines	<b>SCSASAAV2</b>	Latest Revision	Refer IARC	to
Routine Inspection of Electrical Equipment	<b>SCSASABA8</b>	Latest Revision	Refer IARC	to
Standard for control and application for master locks and issue of master keys	<b>DISASAAU1</b>	Latest Revision	Refer IARC	to
The use, care and maintenance of high voltage operating stick	<b>ESKASAAW6</b>	Latest Revision	Refer IARC	to
Medical Surveillance	<b>DISASACA2</b>	Latest Revision	Refer IARC	to
Standard for High Voltage detectors, phasing sticks and associated equipment	<b>DISASAAW5</b>	Latest Revision	Refer IARC	to
Technical Instruction ito ORHVS 5.03.6.3	<b>04-TI-09</b>	Latest Revision	Refer IARC	to
Procedure for the Application and Maintenance of Portable Earths	<b>SCSPVABB1</b>	Latest Revision	Refer IARC	to
<b>Other</b>				
Pre-task planning and feedback process	<b>SCSPVACU1</b>	Latest Revision	Refer IARC	to
Clearing and Maintenance of Servitude Routes	<b>SCSASAAZ9</b>	Latest Revision	Refer IARC	to
Standard for labeling of high voltage equipment	<b>ESKASAAAN 0</b>	Latest Revision	Refer IARC	to
Reporting, Recording, Investigating Costing and Following up of incidents or accidents	<b>34-350 DPC</b>	Latest Revision	Refer IARC	to
Standard for selection, care, use, inspection and maintenance of ladders	<b>DST 0051</b>	Latest Revision	Refer IARC	to
Securing of Ladders	<b>06TI-012</b>	Latest Revision	Refer IARC	to
Provision and use of PPE	<b>DISASAAAT8</b>	Latest Revision	Refer IARC	to
First Aid Standard	<b>34-332</b>	Latest Revision	Refer IARC	to
Identifying, analysing, documenting and observing Dangerous / Hazardous tasks	<b>SCSPVACK0</b>	Latest Revision	Refer IARC	to
Procedure for refusal to work on the grounds of Health, Safety and Environmental concerns	<b>SCSPVABP6</b>	Latest Revision	Refer IARC	to
Procedure for the handling of non-conformance	<b>SCSPVABX4</b>	Latest Revision	Refer IARC	to
Barricading Procedure	<b>SCSPVABF4</b>	Latest Revision	Refer IARC	to
Anti-climbing Devices in Western Region	<b>WTI003</b>	Latest Revision	Refer IARC	to
Anti-climbing Device	<b>05TI-09</b>	Latest Revision	Refer IARC	to
Access to Farms	<b>DISADABQ9</b>	Latest Revision	Refer IARC	to
Procurement of assets, goods and services from Eskom Business Units and Eskom Group Companies	<b>ESKADAAI2</b>	Latest Revision	Refer IARC	to
Eskom Handbook: The receipt, handling, assessment and evaluation of tenders	<b>ESKAMAAD6</b>	Latest Revision	Refer IARC	to
<b>Annexure A</b> : included in (Expanded Public Works Report - Divisional Capital Programme)	<b>DWN 34-1063</b>	Latest Revision	Attached	
Contractor Manpower and OHS Stats Reporting Form	<b>240-1404411286</b>	Latest Revision	Attached - Excel sheet	

Contractor's Performance Appraisal – Process			Attached
Contractor's Performance Appraisal – Actual Appraisal			Attached - Excel sheet
Final release			Attached
Section 37(2) Agreement – To be signed and submitted at tender stage		Latest Revision	Attached
<b>Handover Documents</b>			
Distr. Part7: Substation Sect.4 : Quality Control Process for checking of Distr. Substation construction before handing over for commercial operation	<b>DISASAAQ1</b>	5	Refer to IARC
Supplier Contract Quality Requirements Specification	<b>QM-58</b>	0	Attached
SHEQ Organogram			ATTACHED
<b>Safety and Environmental</b>			
Safety Health and Environment Policy	<b>EPL 32-94</b>	Latest Revision	Refer to IARC
EMP – Generic	<b>October 2013</b>		Attached

### Constraints on how the Contractor Provides the Works

#### Quality Plan

The *Contractor* needs to submit a quality plan indicating the control points for quality to ensure that the *works* are done according to specification.

#### Access to the site

- The Employer will provide the Contractor with an Access Certificate to formally provide access to the site and works implementation.
- The Contractor shall ensure that he is familiar with conditions of access roads and sites as well as subsurface conditions.
- The Contractor will adhere to all the requirements as per the specification **Access to Sites** which includes, but is not restricted to:
  1. Identity cards with photographs
  2. Clearly marked vehicles NB: All contractor vehicles need to be marked with a sticker stating "Eskom Contractor" but should be on Eskom Standard. All Contractor staff should be identifiable by the use of PPE and bibbons reflecting company's name.
  3. Cooperation in order to help Eskom provide the customer with a project schedule reflecting the period during which the construction and commissioning activities will take place.
- The Contractor shall be responsible for negotiation with customers with regard to use of access routes on farms etc.
- The Contractor will be responsible for negotiation with land or business owners and / or the Local Authority with regard to the works.
- The Contractor will be responsible for external disputes which may occur with regard to the works.
- The Contractor is when necessary or needed required to make all the necessary arrangements with the Local Authorities for road crossing structures and removal thereof, e.g. Removal of pavements, thrust boring under roads, wayleaves, etc.

The Contractor to ensure after completion of the *works*, that the attached "Final Release" form is fully completed by the affected landowners. The fully signed form(s) to be submitted to the Eskom representative. Final Payment will not be released unless this fully completed/signed form(s) is received by the Eskom Representative

#### Security of materials on sites

- Storage and security of material will be the responsibility of the Contractor until the Completion Certificate is certified. The Contractor is responsible for all costs involved to expedite lost, damaged or stolen material. All material to adhere to Eskom specification.

### **Material and Bill of Quantities**

- The Bill of Quantities is a provisional measure and quantities are subject to re measurement.
- Storage and security of material will be the responsibility of the Contractor until the Completion Certificate is certified. The Contractor is responsible for all costs involved to expedite lost, damaged or stolen material. All material to adhere to Eskom specification and criteria.
- Materials supplied by the Contractor for proposed projects will be in accordance with the latest revision of Eskom's Distribution standards, project drawings and specified bill of materials.
- Eskom's Bill of Quantities provided in the price list is provisional.
- Contractor to ensure that all materials used is in accordance with Eskom requirements.
- Contractor to indicate material availability as per BOQ supply and install items.
- Materials on site are to be safely secured and stored. Payments are only made once the materials are installed.
- Materials off site: No payment will be made for any materials stored off site or in transit.

### **Site Establishment and De-establishment**

- The Contractor will be required to establish a Site Office on Site where meetings can be held and will ensure that basic amenities are available, such as a table and chairs.
- *Contractor* to clear and de-establish total site on completion of proposed *works*.
- Contractor is required to collect, load, transport and cart away all rubble and surplus demolished *works* to an approved dumping site.
- Contractor to apply good housekeeping at all times.
- Where applicable, Site Establishment will make provision for costs to be incurred by the *Contractor* to ensure adherence to the Environmental Management Plans and Specifications attached to this contract.

### **Carrying out the works**

- The Scope of "*Works*" is an extension of the drawings, specifications and bills of quantities listed. The *Contractor* shall notify the *Employer* of any discrepancies before commencement of the *works*. The bill of materials is the master reference of the scope of works
- The *Contractor* shall complete all quality documentation and mark up any changes to drawings
- The onus is on the *Contractor* to obtain the latest revision of standards applicable. (registration on Eskom IARC web)
- The *Contractor* is required to supply all labour, plant, equipment, loose tools, consumables and transport for the duration and completion of the project.
- *Contractor* to provide summary of all costs for the execution of the *works* of the complete project.
- The *Contractor* must immediately notify the *Employer* in writing of scope and site variations.
- The *Contractor* will report all obstacles on site that could impact negatively on time and cost in writing to the *Employer*.
- The Contractor will be responsible for providing the PPE for their Employees.

### **Subcontracting**

- The *Contractor* will have to notify Eskom (Procurement) in the event of using any Sub-contractor. Subcontractor cannot subcontract work to another subcontractor. Subcontractor preferable must be Eskom Vendor and it is subject to Eskom agreeing to use that subcontractor. Subcontractor must be familiar with the required work and should submit CV's of past experience.

### **Wayleaves and other**

- The Contractor shall adhere to all the requirements of the applicable Local Authority when arranging and completing road and rail crossing. Way-leaves to be obtained from Land Development. All costs for damaged fences and road reserve shall be borne by the Contractor.

### **Invoicing and payment**

- The Contractor will submit his claim as per the NEC Payment Certificate format as attached to this contract with supporting Bill of Quantities on the assessment day. The Contract Number must be clearly visible on the NEC Payment Certificate.



- The Employer will assess Payment certificates on actual work completed. Any possible issues regarding the claim will be addressed by the Employer to the Contractor.
- On acceptance of the Payment Certificate by the Employer the Contractor submits his invoice as agreed upon with the Employer. Payment will take place as per ESKOM Payment Terms and not as per the NEC Conditions of Contract.

In terms of core clause 50 the *Contractor* assesses the amount due and applies to the *Employer* for payment. The *Contractor* applies for payment with a draft tax invoice addressed to the *Employer* as follows:

The *Contractor* includes the following information on each tax invoice:

1. The words "TAX INVOICE" in a prominent place (preferably at the top of the page).
2. Name, address and VAT registration number of the supplier.
3. Name, address and VAT registration number of the recipient. \*  
Please note: Eskom's name has to be reflected as Eskom Holdings SOC Limited on all tax invoices and Eskom's VAT number is 4740101508. The word just Eskom is not acceptable.
4. An individual serial number (tax invoice number) and date issued.
5. A full and proper description of goods and/or services supplied.  
Please note: Merely referring to a contract is not sufficient.
6. The quantity or volume of goods or services supplied.\*
7. Where the supply is subject to VAT at the standard rate, the following in Rand:
  - The pre-VAT value, VAT amount and consideration OR
  - The total consideration with a statement that VAT is included @15% OR
  - The total consideration and the Rand amount of VAT charged.
8. The Contractor attaches the detail assessment of the amount due to each tax invoice showing the Price for Work Done to Date for each item in the Price List for work which he has completed.
9. The Employer will assess Payment certificates on actual work completed. Any possible issues regarding the claim will be addressed by the Employer to the Contractor.
10. On acceptance of the Payment Certificate by the Employer the Contractor submits his invoice as agreed upon with the Employer. Payment will take place as per ESKOM Payment Terms and not as per the NEC Conditions of Contract.

#### E-invoicing:

#### CREATE .pdf invoice

##### Tax Requirement

- A PDF file that was created directly from a system meets the definition of original document and is allowed (including saving documents from excel to PDF, word to PDF etc.)
- An Invoice that was printed and then scanned to PDF by the Vendor is not acceptable as this is not an original tax invoice by SARS definition but a copy.
- The following wording needs to appear on the invoice: "Your invoice is encrypted in order to comply with SARS requirements that invoices and statements sent electronically are tamperproof."

##### CRITICAL INFO ON .pdf invoice

- Ensure that the Eskom order number is clearly indicated on your invoice together with the line number on the order you are billing for. No order number, invoice not processed.
- Each PDF file should contain one invoice; or one debit note; or one credit note only as Eskom's SAP system does not support more than one PDF being linked into workflow at a time.
- All Electronic invoices must be sent in PDF format only. Excel or other format, invoice not processed.
- For Foreign invoices, suppliers will still be required to physically deliver hard copies of original documents to the respective documentation management centers even though you have e-mailed those invoices. Eskom is still seeking clarity from the South African Reserve Bank regarding e-invoicing for Foreign Invoices or invoices in foreign currency. Current requirements are that these manual invoices should still be submitted. You can send the invoice copy to the email addresses indicated below

#### WHERE TO MAIL THE .pdf invoice

Email addresses for invoice submission:

- Local Eskom invoices (excluding Primary Energy, Group Capital, Eskom Enterprises and Eskom Development Foundation): [invoiceseskomlocal@eskom.co.za](mailto:invoiceseskomlocal@eskom.co.za)
- Foreign Eskom invoices (excluding Primary Energy, Group Capital, Eskom Enterprises and Eskom Development Foundation): [invoiceseskomforeign@eskom.co.za](mailto:invoiceseskomforeign@eskom.co.za)
- Primary Energy invoices: [invoicesprimaryenergy@eskom.co.za](mailto:invoicesprimaryenergy@eskom.co.za)
- Group Capital Power Delivery Projects (PDP): [invoicesgrpcapitalPDP@eskom.co.za](mailto:invoicesgrpcapitalPDP@eskom.co.za)
- Group Capital Medupi, HO, PDD: [invoicesgrpcapitalMHP@eskom.co.za](mailto:invoicesgrpcapitalMHP@eskom.co.za)
- Group Capital Mphum & Komati Project: [invoicesgrpcapitalOTH@eskom.co.za](mailto:invoicesgrpcapitalOTH@eskom.co.za)
- Group Capital Kusile & Peaking: [invoicesgrpcapitalKCT@eskom.co.za](mailto:invoicesgrpcapitalKCT@eskom.co.za)
- Eskom Enterprises: [invoiceseskomenterprises@eskom.co.za](mailto:invoiceseskomenterprises@eskom.co.za)
- Eskom Development foundation: [invoicesdevfoundation@eskom.co.za](mailto:invoicesdevfoundation@eskom.co.za)

#### FOLLOW UP with Shared Services (fss)

1. All queries and follow up on invoice payments should be made by contacting the FSS Contact Centre:  
Tel: 011 800 5060 e-mail: [fss@eskom.co.za](mailto:fss@eskom.co.za)
2. Introduction of electronic invoicing does not guarantee payment but will ensure visibility of all invoices and ensure that no invoices get lost. If the goods receipt is not done the invoice will be parked and the system will automatically send an e-mail to the end user to do the goods receipt. This is also tracked by Eskom through the park invoice report.
3. Your company can request a park invoice report from the Finance Shared Services (FSS) contact center which can then be followed up and corrected. You are welcome to forward the details of invoices corrected to the FSS contact center.
4. You do not require a goods receipt (GR) number to submit your invoices. When the GR number is received you can then send the GR number to the above contact details ☐ BUT quoting the GR if you have it, will eliminate parking the invoice "no GR"

#### Performance Management

- The Contractor's Performance will be assessed in accordance with the Performance Appraisal Excel document attached to this contract. At the completion of each task order the sheet must be completed and signed by the project coordinator, clerk of works and contractor and submitted to the contracts management department.

#### Health and Safety Management

**The Contractor shall ensure adherence to Eskom Cardinal Rules at all times:**

##### **RULE 1: OPEN, ISOLATE, TEST, EARTH, BOND AND/OR INSULATE BEFORE TOUCH**

No person may work on any electrical network unless:

- He / she is trained and authorised as competent for the task to be done.
- A pre-task risk assessment to identify all risks and hazards must be conducted prior to any work commencing.
- An equi-potential zone is created for each worker on the job site by earthing, bonding and/or insulating according to approved divisional procedures.
- All conducting material is connected together, all staff onsite wear electrical safety shoes and insulating techniques are applied according to standards.
- The authorised person (Team leader) has certified and shown all team members that the apparatus is safe to work on. He / she is trained and authorised as competent for the task to be done.

##### **RULE 2: HOOK UP AT HEIGHTS**

Working at height is defined as any work where an activity above 2 metres is performed from ladders, scaffolds, platforms, buckets, excavation, structures or where there is a potential for a fall. A pre-task risk assessment to identify all risks and hazards must be conducted prior to any work at height commencing.

No person may work at height where there is a risk of falling unless:

- You are appropriately trained.
- You are appropriately secured during ascending and descending.
- You are using an approved fall arrest system where applicable

##### **RULE 3: BUCKLE UP**



- No person may drive any vehicle on Eskom business: Unless the driver and all passengers are wearing a seat belt

#### **RULE 4: BE SOBER**

No person is allowed to work under the influence of drugs and alcohol. Under-the-influence' means the use of alcohol, drugs and /or a controlled substance to the extent that:

- The individual's faculties are in any way impaired by the consumption or use of the substances or;
- The individual is unable to perform in a safe, productive manner or;
- The individual has a level of any such substance in his body that corresponds with or exceeds accepted medical/legal standards or;
- The individual has a level of alcohol in his body that is greater than 0,02 % blood alcohol concentration.
- Any level of an illegal substance in the body' irrespective of when the substance was used

#### **RULE 5: ENSURE THAT YOU HAVE A PERMIT TO WORK**

Where an authorisation limitation dictates, no person shall work without the required Permit to Work. (PTW)

- Work is as defined in the Plant Safety Regulations (PSR) and Operating Regulations for High Voltage Systems (ORHVS) of Eskom.
- A Risk Assessment must be carried out jointly by the Authorised (AP) and Responsible Person (RP) on all work before it commences.
- The PTW must be issued by an AP, in accordance with the PSR.
- The PTW must be accepted in writing by an authorised RP.
- The PTW shall be shown to everyone working on the job and the risks explained.
- The RP must ensure that all staff working on that job are entered on a Workers' Register and the risks explained to each one.
- The RP must ensure that the conditions of the PTW are enforced for the duration of the work.

#### **The Contractor shall comply with:**

- The Occupational Health and Safety Act, 1993, and all regulations made there under as per the standard clause A1, stipulated on page 4 of this contract.
- The Construction Regulations, 2003.
- The Health and Safety Requirements of the Employer more fully set out in Distribution Standards 34-333 (The Contractor will sign page 36 of the specification as acknowledgement of receipt and adherence)
- All Eskom Safety and Operating Procedures as outlined in the ORHVS (Operating Regulations on High Voltage Systems) and the standards attached to this document i.e. 34-145 and 34-146.

The Contractor shall ensure that the Site supervisor has a valid and applicable ORHVS Authorisation.

The Contractor shall ensure that the Contractor's Responsible Person shall supervise the works at all times and be available to take permits where necessary.

Compensation for occupational Deceased Act Regulations 133/1993

**The Contractor shall appoint a person who will liaise with the Eskom Safety Officer responsible for the premises relevant to this contract. The person so appointed shall:**

- Supply the Eskom Safety Officer with copies of minutes of all Health and Safety Committee meetings (if relevant), on a monthly basis.
- Supply the Eskom Safety Officer with copies of all appointments in respect of employees employed on this contract, in terms of the Act and Regulations and shall advise the Eskom Safety Officer of any changes thereto – to be handed over to the Employer prior to construction start.

**Eskom may, at any stage during the currency of this agreement, be entitled to;**

- do safety audits at the Contractor's premises, its work-places and on its employees;
- refuse any employee, sub-contractor or agent of the Contractor access to its premises if such person has been found to commit any unlawful act or any unsafe working practice or is found to be not authorized or qualified in terms of the Act
- issue the Contractor with a work stop order or a compliance order should Eskom become aware of any unsafe working procedures or conditions or any non-compliance with the Act, Regulations and

Procedures referred to in 1 above by the Contractor or any of its employees, sub-contractors or agents.

No extension of time will be allowed as a result of any action taken by Eskom in terms of the above and the *Contractor shall* have no claim against Eskom as a result thereof. Furthermore, no amendments to the Act or the Regulations or reasonable amendment to Eskom's Safety and Operating Procedures will entitle the *Contractor* to claim any additional costs incurred in complying therewith from Eskom.

The *Contractor* shall be responsible for all expenses incurred to ensure adherence to Health and Safety Regulations as stipulated above which includes but is not restricted to ORHVS training courses, etc.

The Contractor shall ensure that he completes and submits a Safety Plan to the Employer with his tender.

- Typically, the following identified risks could endanger the work as done by the Contractor. The Contractor should identify mitigation actions for these risks, as well as identify any additional risks:

Typical Risk	Y/N	Detailed Description
Live underground cables	y	
Work in live chambers/restricted areas	y	
Live overhead conductors/crossings	y	
Close proximity work to live equipment	y	
Operating of cranes/vehicle mounted	y	
Static electricity/induction	y	
Work with chainsaws/mechanical cutters	y	
Materials handling/ heavy equipment handling	y	
Conductor stringing and tensioning	y	
Vehicle risks	y	
Work in open trenches/excavations	y	
Biological/Health risks (camps)	y	
Weather related risks (UV, heat, cold, wind, rain, snow, etc.)	y	
Environmental risks	y	
Ergonomic risks (body position, fatigue)	y	
Work on/dismantling of rusted & rotten poles and structures	y	
Fire risks	y	
Public safety risks	y	
Work close to public roads	y	
Working in Environmental Sensitive Area	y	
Historical events that could influence the project, i.e. current structure designs, age of structures to be worked on, etc	y	
Demographics of the area	y	

#### **SHEQ Requirements:**

In compliance to Eskom's SHEQ Policy, the Contractor to ensure;

- Commitment to safety, health and environmental excellence
- Conduct business with respect and care for people and minimise or avoid impact on the environment
- Compliance to environmental legislation, conditions of Environmental Authorisations and requirements set out in environmental management plans
- Acceptance that all injuries and occupational illnesses, as well as safety and environmental incidents are preventable
- Report, respond to, investigate, close-out, and share learning from safety and environmental incidents
- That SHE is an integral part of your operations and that:
  - no operating condition, or urgency of service, can justify endangering the life of anyone or cause injury or damage to the environment

In addition, the Contractor to ensure as a tender returnable the following information (as per organogram) is provided to the Employer, stating who the relevant qualified person is as per various role levels of the below organogram with all required credentials.



#### **Compensation for Occupational Injury and Diseases Act**

- The Contractor shall submit with his tender proof of adherence to the above act.

#### **Quality of workmanship**

- The *Contractor* is required to employ a competent Supervisor or Foreman on site for the duration of the project to implement workmanship quality checks. The Supervisor / Foreman appointed by the *Contractor* must be authorized to take a permit in terms of ORHVS and working earths.
- Eskom will do inspections and quality checks on installations completed by the *Contractor* prior to hand-over of each project.

#### **Quality Assurance Requirements**

- The Contractor shall comply with all quality requirements as set out in the document QM-58 i.e. Eskom Contract Quality Requirements Specification. The Contractor shall comply with ISO9001:2008 Quality Management System Requirements. The Contractor shall comply with all other regulatory and statutory requirements applicable to the works.

#### **Environmental Management**

- The *Contractor* shall receive an Environmental Management Plan and the *Contractor* must manage the documents.
- All environmental legal Liabilities and claims arising from the activities of the *Contractor* shall be for the *Contractors* expense.
- The *Contractor* shall have an understanding of Eskom's basic environmental principles and commitments.

#### **Expanded Public Works Programme (EPWP)**

- The Department of Public Works in conjunction with the Department of Minerals and Energy requires information for reporting purposes.
- Electrification, Sub-transmission and Refurbishment Projects:

Please find attached CONTRACTOR MANPOWER AND OHS STATS REPORTING FORM to be completed by the Contractor and submitted to the Contracts Management Services Department on a monthly bases for each project or task order during construction.

### **General**

- Except for site management and specialised labour such as operators for plant and equipment, the *Contractor* is encouraged to use "local" labour on a temporary basis for all manual tasks.
- The *Contractor* will attend all site meetings as arranged by the *Employer*
- All Construction work shall be carried out in accordance with all the statutory requirements applicable to the area, Eskom's specifications, standards and regulations
- The *Contractor* will be given access to the proposed site and the *Contractor* must comply with Eskom's national, Provincial and local environmental policies and laws.
- The *Employer* reserves the right to alter the scope of the works and programme.
- The *Employer* reserves the right to remove certain sections from the detailed scope of works as described in this contract.
- The Contractor should preferably use Local labour and train skilled labour.
- Any compensation event that includes work as per rated items in the BOQ are to be quoted or priced using those respective BOQ rates.

### **Requirements for the programme**

A programme showing the key activities is to be submitted with the tender documents showing the following:

- Provide Bar Chart outlining start and completion date for construction activities on site.
- The order and timing of operations which the Contractor plans in order to provide the works.

Strict adherence to the programme will be monitored and updated to achieve the completion dates and submitted to Eskom Project Co-ordinator. Non-conformance to the stated programme will be liable for delay damages. Any deviations on time and cost are subject to Eskom approval.

## PART 4: SITE INFORMATION

Document reference	Title	No of pages
C4	This cover page Site Information	1
	Total number of pages	

## PART 4: SITE INFORMATION

Core clause 11.2(16) states

“Site Information is information which

- describes the Site and its surroundings and
- is in the documents which the Contract Data states it is in.”

In Contract Data, reference has been made to this Part 4 of the contract for the location of Site Information.

### 1. General description

1. The Employer will arrange a site clarification meeting prior to the quote submission date.
2. The Contractor to ensure that he becomes fully aware of site conditions as well as access conditions such as soil/subsurface conditions prior to submitting a quote.
3. Contractor access is limited to the working area.
4. Access control to be strictly monitored by the contractor to avoid any negligent or illegal events on premises during and after working hours.
5. If an existing barrier fence is removed, it must be replaced the same day.
6. The contractor is deemed to execute safety procedures to ensure the safety of his staff, sub-contractors, Eskom staff and community during the contract period.
7. The safety of the contractor's employees, sub-contractors and community takes preference over the scope of the works.
8. The contractor, his staff and sub-contractors must maintain identification at all times e.g. uniforms etc.
9. The Contractor should take all reasonable steps to become fully aware of existing services.
10. No fires are allowed on site (to fully comply as per EMP).