

ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION



## NEC3 Engineering & Construction Contract

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

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

for **ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA  
2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS)  
SUBSTATION FOR ERICA SUBSTATION**

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

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## Part C1: Agreements & Contract Data

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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:

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION.**

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 A	The offered total of the Prices exclusive of VAT is	<b>R</b>
	Sub total	<b>R</b>
	Value Added Tax @ 15% is	<b>R</b>
	The offered total of the amount due inclusive of VAT is <sup>1</sup>	<b>R</b>
	(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*.

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## 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.

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### 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>A:</b> Priced contract with activity schedule
	and secondary Options	<b>W1:</b> Dispute resolution procedure
		<b>X1:</b> Price adjustment for inflation
		<b>X2:</b> Changes in the law
		<b>X3:</b> Multiple currencies
		<b>X4:</b> Parent company guarantee
		<b>X5:</b> Sectional Completion
		<b>X7:</b> Delay damages
		<b>X13:</b> Performance Bond
		<b>X16:</b> Retention
		<b>X18:</b> Limitation of liability
		<b>Z:</b> <i>Additional conditions of contract</i>
	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>Waldo van Heerden</b>
	Address	<b>60 Voortrekker Road, Bellville, 7530</b>
	Tel	<b>(021) 915 9260 / 082 321 4566</b>
	Fax	<b>N/A</b>
	e-mail	<b>vheerdwe@eskom.co.za</b>

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10.1	The <i>Supervisor</i> is: (Name)	<b>TBA</b>
	Address	<b>TBA</b>
	Tel No.	<b>TBA</b>
	Fax No.	<b>TBA</b>
	e-mail	<b>TBA</b>
11.2(13)	The <i>works</i> are	<ol style="list-style-type: none"> <li>1. The construction of new 400/132kV substation building including earthworks.</li> <li>2. The design, manufacture, supply and installation of a new 400kV and 132kV GIS system.</li> <li>3. The supply and installation of new 2 x 400/132/22kV 500 MVA Transformers</li> <li>4. The supply and installation of new 2 x 22kV/400V 500KVA Auxiliary Transformers</li> <li>5. The supply and installation of protection schemes</li> <li>6. Erection and earthing for 400kV GIS bays. <ol style="list-style-type: none"> <li>6.1. For Feeders: 1 x feeder to be equipped and 2 x spare feeders (fully equipped) and 1 x future feeder.</li> <li>6.2. For Transformer bay: 2 x bays to be equipped and 1 x spare (fully equipped) and 1 x future.</li> </ol> </li> <li>7. Erection and Earthing for 4 x 132kV Feeder bays.</li> <li>8. Provide for 6 x future 132 kV GIS feeder bays.</li> <li>9. Design, supply, installation and commissioning of integrated security system, non-lethal energised perimeter detection system and perimeter lighting.</li> </ol>
11.2(14)	The following matters will be included in the Risk Register	<b>non-availability of outages to commission and non-availability of commissioning resources, crime prevalence around the construction area, community unrests, low visibility, high winds, high water table, construction in live yard, unrecorded underground services.</b>
11.2(15)	The <i>boundaries of the site</i> are	<b>Erica substation boundaries</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 (2) 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>

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### 3 Time

11.2(3)	The <i>completion date</i> for the whole of the works is	<b>31 Aug 2028</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 Completion of Construction Drawings	31 Oct 2025
		2 Site Establishment	15 Jan 2025
		3 Completion of construction of GIS and Control Building and installation and commissioning of integrated security system, non-lethal energised perimeter detection system and perimeter lighting	30 Sept 2026
		4 Completion of Factory acceptance test for Protection equipment	30 Nov 2026
		5 Completion of delivery, Installation and cold commissioning of 2 x 400/132/22kV 500MVA Transformers, 2 x Aux Transformers,	30 April 2027
		6 Completion of the delivery and installation of all GIS Feeders in the building	31 Oct 2027
		7 Completion of Pre-commissioning and testing	30 Jun 2028
		8 Completion of Commissioning	31 Aug 2028
30.1	The <i>access dates</i> are:	<b>Part of the Site</b>	<b>Date</b>
		1 Whole of the works	03 March 2025
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	<b>Two (2) weeks of the Contract Date.</b>	
31.2	The <i>starting date</i> is	<b>03 March 2025</b>	
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	<b>Two (2) weeks.</b>	
35.1	The <i>Employer</i> is not willing to take over the works before the Completion Date.		

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#### 4 Testing and Defects

42.2	The <i>defects date</i> is	Hundred and Fifty Six (156) weeks after Completion of the whole of the <i>works</i> .
43.2	The <i>defect correction period</i> is	Two (2) weeks
	except that the <i>defect correction period</i> for	Defects which the <i>Supervisor</i> notifies may jeopardise the performance of the works in use is the shortest possible time starting immediately after notification of the defect
		Defects which the Supervisor notifies require urgent attention is 48 (forty-eight) hours starting immediately after notification of the Defect, unless the parties, acting in good faith, agree otherwise.

#### 5 Payment

50.1	The <i>assessment interval</i> is	Between the 20 <sup>th</sup> and 25 <sup>th</sup> day of each successive month
		In order to facilitate payment for work done, the <i>Contractor</i> is to submit his Schedule of completed activities (verified by the <i>Supervisor</i> ) for payment to the <i>Project Manager</i> by the 20th day of each month, in a similar format to the <i>bill of quantities</i> . The <i>Project Manager</i> will determine the value of the work done in accordance with Core <i>clause</i> 5 and changes to Core <i>clause</i> Z (A) sub-clause 50.2
51.1	The <i>currency of this contract</i> is the	South African Rand.
51.2	The period within which payments are made is	Sixty (60) days
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 <i>mutatis mutandis</i> every 6

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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.

## 6 Compensation events

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>Erica Substation</p> <p>the cumulative rainfall (mm)</p> <p>the number of days with rainfall more than 10 mm</p> <p>the number of days with minimum air temperature less than 0 degrees Celsius</p> <p>the number of days with snow lying at 09:00 hours South African Time</p> <p>and these measurements:</p> <ol style="list-style-type: none"> <li>1. The minimum and maximum daily temperature in °C (degrees Celsius)</li> <li>2. The Wind speed in km/h</li> </ol> <p>South African Weather Services</p> <p>Kenilworth racecourse</p> <p>the South African Weather Bureau and included in Annexure A to this Contract Data provided by the <i>Employer</i></p>
60.1(13)	Assumed values for the ten years return <i>weather data</i> for each <i>weather measurement</i> for each calendar month are:	As stated in Annexure A to this Contract Data provided by the <i>Employer</i> .

7	<b>Title</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.
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## 8 Risks and insurance

80.1	These are additional <i>Employer's</i> risks	1. NONE
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9	<b>Termination</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.
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## 10 Data for main Option clause

A	Priced contract with activity schedule	There is no reference to Contract Data in this
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	Option and terms in italics are identified elsewhere in this Contract Data.		
11	Data for Option W1		
W1.1	The <i>Adjudicator</i> is	the person selected by agreement of the parties from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators (see <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a> ). The party referring the dispute shall propose the name of the Adjudicator to the other party. If the Parties do not agree on an Adjudicator the Adjudicator will be appointed, then the Adjudicator shall be appointed in terms of clause W1.2(3) below. The failure to identify or appoint a specific person to act as an Adjudicator shall not operate as preventing a time bar defence.	
	Address	[TBA]	
	Tel No.	[TBA]	
	Fax No.	[TBA]	
	e-mail	[TBA]	
W1.2(3)	The <i>Adjudicator nominating body</i> is:	Subject to the provisions of clause W1.1 above, 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	Johannesburg South Africa	
	The person or organisation who will choose an arbitrator	the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.	
	- if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is		
12	Data for secondary Option clauses		
X1	Price adjustment for inflation	CPA will kick in after fifteen (15) months from the base date for commodities with prices that are less volatile	
X1.1(a)	The <i>base date</i> for indices is	One (1) month prior tender closing date	
X1.1(c)	The proportions used to calculate the Price Adjustment Factor are:	Proportion	linked to index for Index prepared by

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<u>Local Portion:</u>				
Preliminary & General items	0.85	Table D-3 (CPI)	Seifsa Index	
Earthworks	0.70	Table G-3 (CE: Bulk Earthworks )	Seifsa Index	
	0.15	Table D-3 (CPI) Plant	Seifsa Index	
Civil Works	0.70	Table G-3 (CE: Roads & General)	Seifsa Index	
	0.15	Table C-3(a): Labour (hourly paid)	Seifsa Index	
Building Works	0.75	Table G2 (A) (Building Installation)	Seifsa Index	
	0.10	Table C-3(a): Labour (hourly paid)	Seifsa Index	
Structural Steel	0.70	Table E-A: (Galvanised)	Seifsa Index	
	0.15	Table D-3 (CPI) Plant	Seifsa Index	
Electrical Cables	0.70	Table M-6: (Electrical Cable)	Seifsa Index	
	0.15	Table C-3(a): Labour (hourly paid)	Seifsa Index	
Transport/Delivery	0.85	Table L-2(A): Road Freight Costs	Seifsa Index	
GIS Equipment Installation	0.85	Table D-3 (CPI)	Seifsa Index	
Test & Commissioning	0.85	Table D-3 (CPI)	Seifsa Index	
	0.15	non-adjustable		
Total	1.00			

<b>X3</b>	<b>Multiple currencies</b>			
X3.1	The <i>Employer</i> will pay for these items or activities in the currencies stated	Items & activities	Other currency	Maximum payment in other currency
		[•]	[•]	[•]
		[•]	[•]	[•]

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		[•]	[•]	[•]
		[•]	[•]	[•]
X3.1	The <i>exchange rates</i> are those published in	South African Reserve Bank website ( <a href="http://www.resbank.co.za">www.resbank.co.za</a> ) on the date the tender was published.		
X4	Parent company guarantee	There may be a requirement for the <i>Contractor</i> to furnish security reasonably acceptable to the <i>Employer</i> , which security may take the form of a Parent Company Guarantee, which security/ies shall be finalized at the time of contracting.		
X5	Sectional Completion			
X5.1	The <i>completion date</i> for each <i>section</i> of the <i>works</i> is:	Section	Description	Completion date
		1	Completion of Construction Drawings	31 Oct 2025
		2	Site Establishment	15 Jan 2025
		3	Completion of construction of GIS and Control Building and installation and commissioning of integrated security system, non-lethal energised perimeter detection system and perimeter lighting	30 Sept 2026
		4	Completion of Factory acceptance test for Protection equipment	30 Nov 2026
		5	Completion of delivery, Installation and cold commissioning of 2 x 400/132/22kV 500MVA Transformers, 2 x Aux Transformers,	30 April 2027
		6	Completion of the delivery and installation of all GIS Feeders in the building	31 Oct 2027

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		7	Pre-commissioning and testing	30 Jun 2028
		8	Completion of Commissioning	31 Aug 2028
X5 & X7	Sectional Completion and delay damages used together			
X7.1 X5.1	Delay damages for late Completion of the sections of the works are:	section	Description	Amount per day
		1	Completion of Construction Drawings	R 30 000.00
		2	Site Establishment	R 120 000.00
		3	Completion of construction of GIS and Control Building and installation and commissioning of integrated security system, non-lethal energised perimeter detection system and perimeter lighting	R 450 000.00
		4	Completion of Factory acceptance test for Protection equipment	R 120 000.00
		5	Completion of delivery, Installation and cold commissioning of 2 x 400/132/22kV 500MVA Transformers, 2 x Aux Transformers,	R 730 000.00
		6	Completion of the delivery and installation of all GIS Feeders in the building	R120 000.00
		7	Pre-commissioning and testing	R 250 000.00
		8	Completion of Commissioning	R 250 000.00
	Remainder of the works			
	The total delay damages payable by the Contractor does not exceed:	10% of contract value		
X13	Performance bond			

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X13.1	The amount of the performance bond is	<b>5% of the contract value</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>0%</b>
	The <i>retention percentage</i> is	<b>7.5% of contract value 50% of the retention is payable when the whole of the works is taken over on Completion and the remainder is paid on the expiry of the defects period which is 156 weeks after the works has been taken over</b>
	The SDL&I and Stability and CSI retention percentage is	<b>2,5% of the total of the Prices (refer to C3 Works Information).</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 of</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) plus the applicable deductible as at contract date.</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:	<p><b>the total of the Prices other than for the additional excluded matters.</b></p> <p><b>The <i>Contractor's</i> total liability for the additional excluded matters is not limited.</b></p> <p><b>The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for</b></p> <ul style="list-style-type: none"> <li>• Defects due to his design which arise before the Defects Certificate is issued,</li> <li>• Defects due to manufacture and fabrication outside the Site,</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>

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X18.5 The *end of liability date* is (i) Seven (7) years after the *defects date* for latent Defects and

(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.

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.

**Z** The *Additional conditions of contract* are Z1 to Z15 always apply.

## **Z1 Cession delegation and assignment**

- Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*.
- Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* 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.

## **Z2 Joint ventures**

- Z2.1 If the *Contractor* 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 *Employer* for the performance of this contract.
- Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.
- Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

## **Z3 Change of Broad Based Black Economic Empowerment (B-BBEE) status**

- Z3.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor's* B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.
- Z3.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager*

within thirty days of the notification or as otherwise instructed by the *Project Manager*.

Z3.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor's* obligation to Provide the Works.

Z3.4 Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

## **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

## ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

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 Authorisation (EA) and other Approvals / Permits, WUL Report with Water use license conditions, EIA Report, EMPr, environmental legislation, regulations, 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. No Construction activities may occur without the WUL (Water Use Licence)

## **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)**

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- 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:

<b>Affected Party</b>	means, as the context requires, any party, irrespective of whether it is the <i>Contractor</i> 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 and shall include any Politically Exposed Person (PEP) as contemplated in the Regulation 4(3) of the Money Laundering Control Regulations promulgated in terms of the Financial Intelligence Centre Act (Act 38 of 2001).
<b>Coercive Action</b>	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,
<b>Collusive Action</b>	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,
<b>Committing Party</b>	means, as the context requires, the <i>Contractor</i> , or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,
<b>Corrupt Action</b>	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,
<b>Fraudulent Action</b>	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,
<b>Obstructive Action</b>	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
<b>Prohibited Action</b>	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.

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## **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 <i>works</i> , Plant and Materials	The replacement cost where not covered by the <i>Employer's</i> insurance  The <i>Employer's</i> policy deductible, as at 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 <i>works</i> , 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 at 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.

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**INSURANCE TABLE B**

<b>Insurance against or name of policy</b>	<b>Minimum amount of cover or minimum limit of indemnity</b>
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

#### **Z14 Nuclear Liability**

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

#### **Z15 Asbestos**

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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.
<b>Standard</b>	means the <i>Employer's</i> Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.
<b>SANAS</b>	means the South African National Accreditation System.
<b>TWA</b>	means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the base line 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.

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- 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.

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## Annexure A: One-in-ten-year-return weather data obtained from SA Weather Bureau for Kenilworth Race Course

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.



### LEGEND

'AVE' represents the average rainfall for the month

'ST DEV' represents the standard deviation from the normal

$s = \text{SQRT} (\text{SUM}(X^2)/n - (\text{AVE}(x) * \text{AVE}(x)))$

'N DAY RAIN' represents the average number of rain days per month

'NUM MON' represents the number of months used in the calculation

'r1 r2' represents the average number of raindays in range r1 to r2 inclusive

'MAX R DAY' represents the maximum rainfall that occurred over a 24-hour period. (08:00-08:00)

'MAX RAIN DATE' represents the date on which the maximum 24 hour rainfall occurred

DATA FOR THE AVERAGE CALCULATION ARE NOT USED IF :

1. There are more than 5 consecutive days of accumulation
2. The data for certain days in the month unavailable
3. The accumulation period occurred at the end of a month

DATA FOR THE FREQUENCY CALCULATION ARE NOT USED IF :

1. Accumulation occurred in the month
2. The data for certain days in the month are unavailable

2012-2020

0020839A2 KENILWORTH RACE

COURSE ARS

Lat:33°59'53"S

Lon:18°28'48"E

Height:29 m

MON	AVE	ST	N DAY	NUM	1	5,1	10,1	20,1	50	100,1	MAX R	MAX RAIN
MON		DEV	RAIN	MON	5	10	20	50	100	900	DAY	DATE
JAN	16	10	3,7	7	1,3	0,6	0,1	0,3	0	0	24	2019/01/11
FEB	6,8	7,5	4	7	1,6	0	0,1	0	0	0	12,8	2013/02/09
MAR	21,2	21,3	5,7	7	1,9	0,9	0,4	0,1	0	0	47,4	2016/03/26
APR	37,6	19,6	7,3	4	2,5	0,5	0,5	0,5	0	0	88,4	2013/04/16
MAY	81,9	52,1	10,3	6	3,5	1,2	0,8	1,2	0,2	0	71	2019/05/19
JUN	204,2	27,6	13	4	3,5	2	2	2	1,5	0	86,2	2012/06/07

## ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

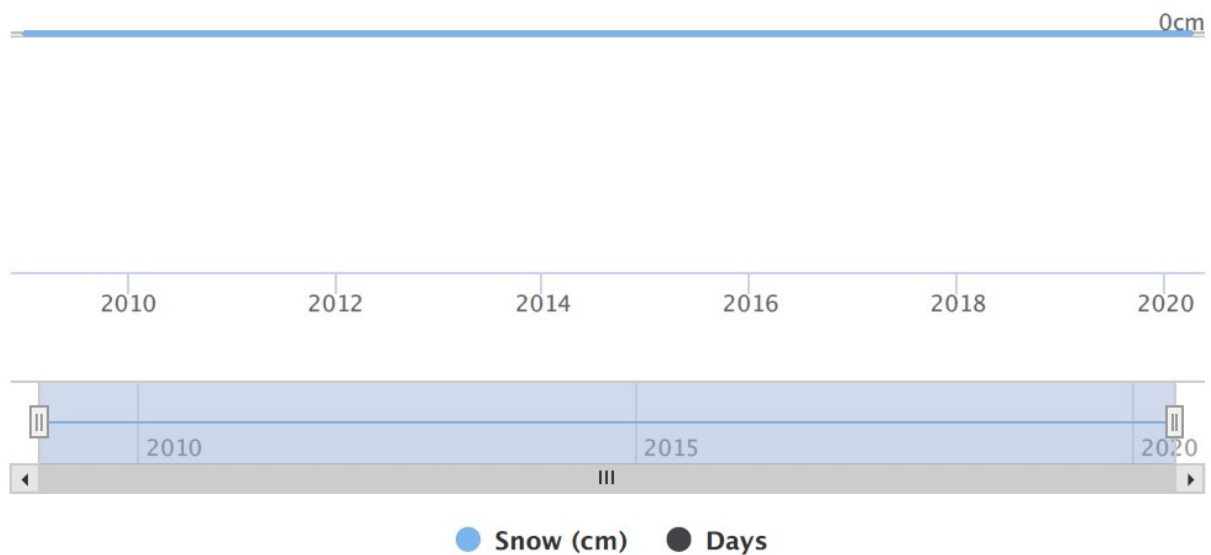
JUL	182,8	61,4	14	3	4,7	2	3	2,3	0,7	0	108,6	2015/07/17
AUG	172,6	131,3	13	5	4	2,2	1,2	2,6	0,6	0	86,2	2013/08/28
SEP	74,6	49,6	11,9	7	3,7	1	2,1	0,7	0,1	0	52,2	2013/09/13
OCT	36,4	45,5	6,1	7	2,9	0,6	0,3	0,3	0,1	0	92,8	2019/10/24
NOV	14,3	12,5	5,2	5	2,4	0,4	0	0,2	0	0	20,6	2015/11/01
DEC	20,8	18,4	4,3	7	1,7	0,4	0,4	0,1	0	0	36,6	2018/12/06
YR	869,2		98,5		33,6	11,7	11,1	10,4	3,2	0		

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

## Cape Town

## Average Snowfall Amount (cm) and Snow Days

Zoom **1m** 3m 6m YTD 1y **All**

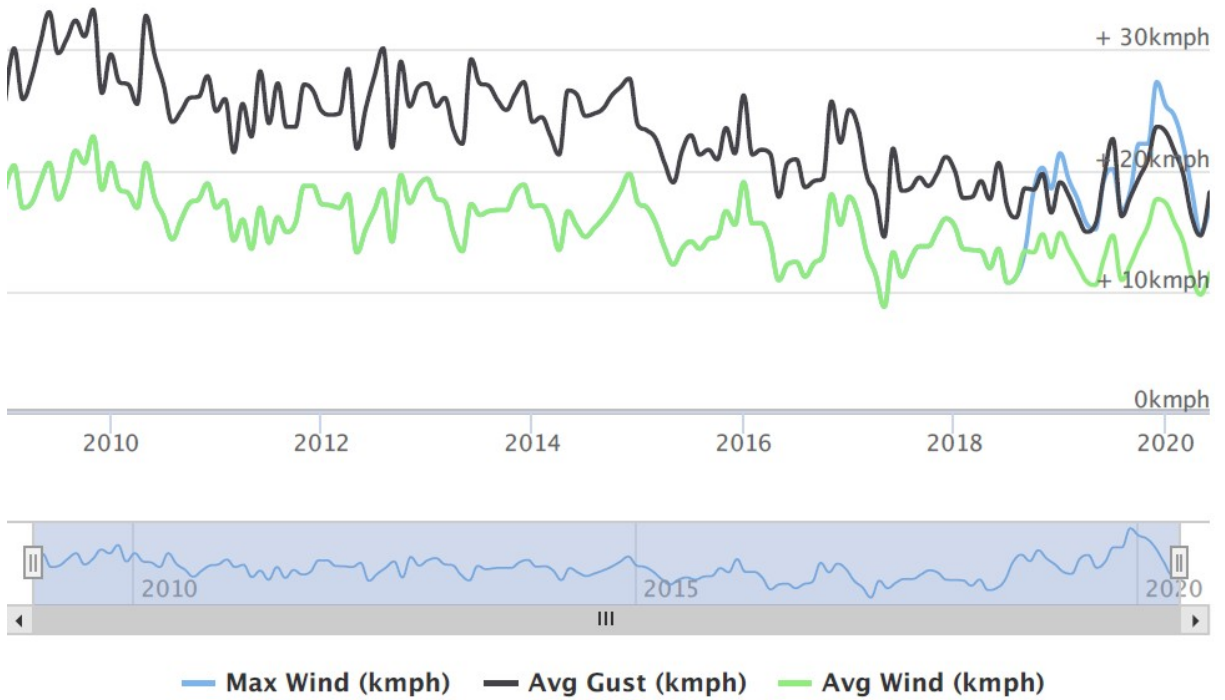


ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

## Cape Town

Average and Max Wind Speed and Gust (kmph)

Zoom 1m 3m 6m YTD 1y **All**

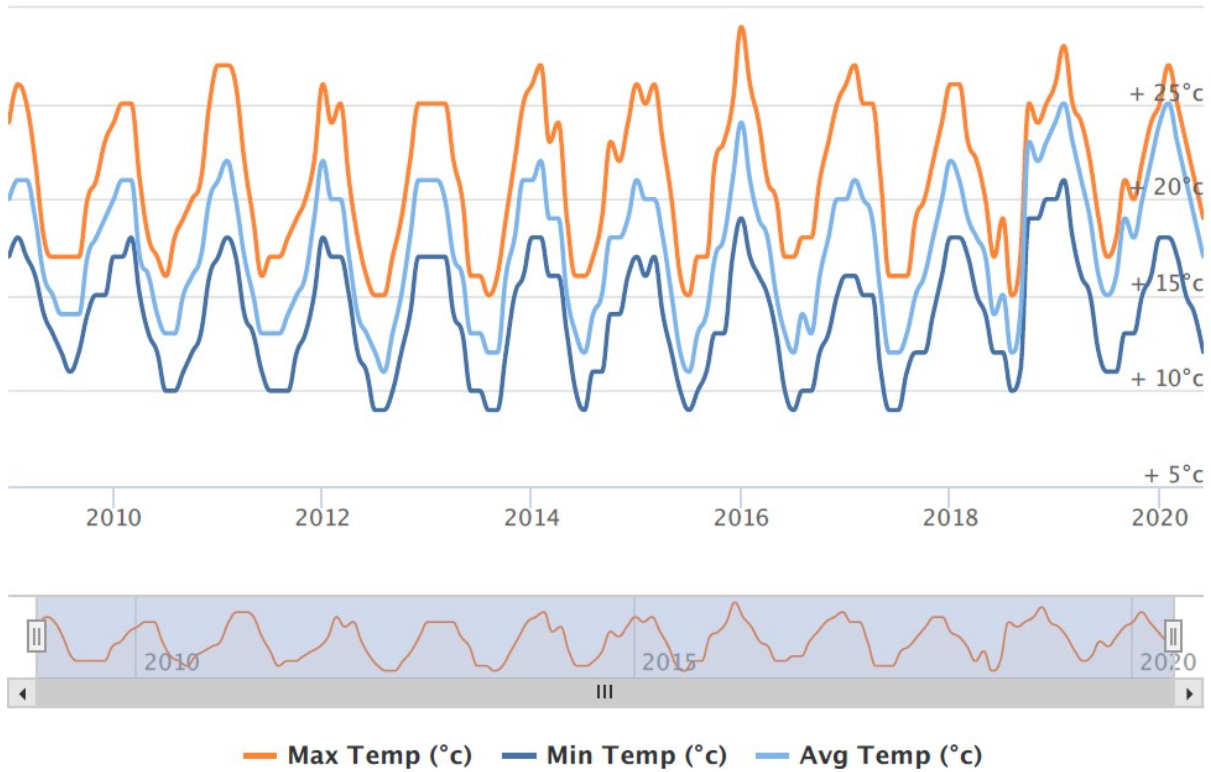


ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

## Cape Town

Max, Min and Average Temperature (°c)

Zoom 1m 3m 6m YTD 1y **All**



## C1.2 Contract Data

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

#### Notes to a tendering contractor:

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

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

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	% %
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job: Responsibilities: Qualifications: Experience:	CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .

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

## ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	
11.2(14)	The following matters will be included in the Risk Register	
11.2(19)	The Works Information for the <i>Contractor's</i> design is in:	
31.1	The programme identified in the Contract Data is	
<b>A</b>	<b>Priced contract with activity schedule</b>	
11.2(20)	The <i>activity schedule</i> is in	
11.2(30)	The tendered total of the Prices is	(in figures)  (in words), excluding VAT
	<b>Data for Schedules of Cost Components</b>	<i>Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).</i>
<b>A</b>	<b>Priced contract with activity schedule</b>	<b>Data for the Shorter Schedule of Cost Components</b>
41 in SSCC	The percentage for people overheads is:	%
21 in SSCC	The published list of Equipment is the last edition of the list published by  The percentage for adjustment for Equipment in the published list is	Minus %
22 in SSCC	The rates of other Equipment are:	Equipment  Size or capacity  Rate
61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are  <b>Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates.</b>  <b>Please insert another schedule if foreign resources may also be used</b>	Category of employee  Hourly rate

## ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

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:		
44 in SCC	The percentage for Working Areas overheads is:	:	%
51 in SCC	<p>The hourly rates for Defined Cost of manufacture or fabrication outside the Working Areas are</p> <p><b>Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates</b></p> <p><b>Please insert another schedule if foreign resources may also be used</b></p>	<b>Category of employee</b>	<b>Hourly rate</b>
52 in SCC	The percentage for manufacture and fabrication overheads is	%	

## C1.3 Forms of Securities

### Pro formas for Bonds & Guarantees

For use with the NEC3 Engineering & Construction Contract

The *conditions of contract* stated in the Contract Data Part 1 include the following Secondary Options:

Option X4: Parent company guarantee  
Option X13: Performance Bond

Each of these secondary Options requires a bond or guarantee “in the form set out in the Works Information”. Pro forma documents for these bonds and guarantees are provided here for convenience but are to be treated as part of the Works Information.

Option X16: Retention

The *Contractor* may provide a Retention Money Guarantee in the form stated here. When the *Employer* receives and accepts a Retention Money Guarantee exactly in the form stated he will instruct the *Project Manager* not to assess any amount be retained in terms of secondary Option X16.

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

ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

## Pro forma Parent Company Guarantee (for use with Option X4)

(to be reproduced exactly as shown below on the letterhead of the Contractor's Parent Company)

Eskom Holdings SOC Ltd  
Megawatt Park  
Maxwell Drive  
Sandton  
Johannesburg

Date:

Dear Sirs,

### Parent Company Guarantee for Contract No

With reference to the above numbered contract made or to be made between

Eskom Holdings SOC Ltd

(the *Employer*) and

{Insert registered name and address of the *Contractor*}

(the *Contractor*), for

{Insert details of the *works* from the Contract Data}

(the *works*).

I/We the undersigned

on behalf of the *Contractor's*  
parent company

of physical address

and duly authorised thereto do hereby unconditionally guarantee to the *Employer* that the *Contractor* shall Provide the Works in accordance with the above numbered Contract.

1. If for any reason the *Contractor* fails to Provide the Works, we hereby agree to cause to Provide the Works at no additional cost to the *Employer*.
2. If we fail to comply with the terms of this Deed of Guarantee, the *Employer* may itself procure such performance (whether or not the Agreement be formally determined). The *Employer* is to notify us and we shall indemnify the *Employer* for any additional cost or expense it incurs.
3. Our liability shall be as primary obligor and not merely as surety and shall not be impaired or discharged by reason of any arrangement or change in relationship made between the *Contractor* and the *Employer* and/or between us and *Contractor*; nor any alteration in the obligations undertaken by the *Contractor* or in the terms of the Agreement; nor any indulgence, failure, delay by you as to any matter; nor any dissolution or liquidation or such other analogous event of the *Contractor*.
4. The *Employer* shall not be obliged before taking steps to enforce the terms of this Deed of Guarantee to obtain judgement against the *Contractor* in any court or other tribunal, to make or file any claim in liquidation (or analogous proceedings) or to seek any remedy or proceed first against the *Contractor*.
5. This Deed of Guarantee shall be governed by and construed in accordance with the laws of the Republic of South Africa and we hereby submit to the non-exclusive jurisdiction of the High Court of South Africa.

ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

Signed at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ 200\_

Signature(s)

Name(s) (printed)

Position in parent company

Signature of Witness(s)

Name(s) (printed)

## Pro forma Performance Bond – Demand Guarantee (for use with Option X13)

(to be reproduced exactly as shown below on the letterhead of the Contractor's Parent Company)

**Eskom Holdings SOC Ltd**  
**Megawatt Park**  
**Maxwell Drive**  
**Sandton**  
**Johannesburg**

Date:

Dear Sirs

Reference No. [●] [Drafting Note: Bank reference number to be inserted]

**Performance Bond – Demand Guarantee:** [Drafting Note: Name of Contractor to be inserted]

Project [ ] Contract Reference: ..... [Drafting Note: Contractor contract reference number to be inserted]

In this Guarantee the following words and expressions shall have the following meanings:-

“Bank” - means [●], [●] Branch, (Registration No. [●]); [Drafting Note: Name of Bank to be inserted]

“Bank’s Address” - means [●]; [Drafting Note: Bank’s physical address to be inserted]

“Contract” – means the written agreement relating to the Project, entered into between Eskom and the Contractor, on or about the [●] day of [●] 200[●] (Contract Reference No. [.] as amended, varied, restated, novated or substituted from time to time; [Drafting Note: Signature Date and Contract reference number to be inserted])

“Contractor” – means [●] a company registered in accordance with the laws of [●] under Registration Number [●]. [Drafting Note: Name and details of Contractor to be inserted]

“Eskom” - means Eskom Holdings SOC Ltd, a company registered in accordance with the laws of the Republic of South Africa under Registration Number 2002/015527/30].

“Expiry Date” - means the date on which the Defects Certificate is issued in terms of the Contract.

“Guaranteed Sum” - means the sum of R [●] ([●] Rand);

“Project” - means [insert if applicable].

At the instance of the Contractor, we the undersigned \_\_\_\_\_ and \_\_\_\_\_, in our respective capacities as \_\_\_\_\_ and \_\_\_\_\_ of the Bank, and duly authorized thereto, confirm that we hold the Guaranteed Sum at the disposal of Eskom, as security for the proper performance by the Contractor of all of its obligations in terms of and arising from the Contract and hereby undertake to pay to Eskom, on written demand from Eskom received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.

A demand for payment under this guarantee shall be made in writing at the Bank's address and shall:

be signed on behalf of Eskom by a Group Executive, Divisional Executive, Senior General Manager, General Manager or its delegate;

state the amount claimed (“the Demand Amount”);

state that the Demand Amount is payable to Eskom in the circumstances contemplated in the Contract.

ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

Notwithstanding the reference herein to the Contract the liability of the Bank in terms hereof is as principal and not as surety and the Bank's obligation/s to make payment:

is and shall be absolute provided demand is made in terms of this bond in all circumstances; and

is not, and shall not be construed to be, accessory or collateral on any basis whatsoever.

The Bank's obligations in terms of this Guarantee:

shall be restricted to the payment of money only and shall be limited to the maximum of the Guaranteed Sum; and

shall not be discharged and compliance with any demand for payment received by the Bank in terms hereof shall not be delayed, by the fact that a dispute may exist between Eskom and the Contractor.

Eskom shall be entitled to arrange its affairs with the Contractor in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the Contractor or any variation under or to the Contract.

Should Eskom cede its rights against the Contractor to a third party where such cession is permitted under the Contract, then Eskom shall be entitled to cede to such third party the rights of Eskom under this Guarantee on written notification to the Bank of such cession.

This Guarantee:

shall expire on the Expiry Date until which time it is irrevocable;

is, save as provided for in 0 above, personal to Eskom and is neither negotiable nor transferable;

shall be returned to the Bank upon the earlier of payment of the full Guaranteed Sum or expiry hereof;

shall be regarded as a liquid document for the purpose of obtaining a court order; and

shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the Courts of the Republic of South Africa.

Any claim which arises or demand for payment received after expiry date will be invalid and unenforceable.

The Bank chooses domicilium citandi et executandi for all purposes in connection with this Guarantee at the Bank's Address.

Signed at \_\_\_\_\_

Date \_\_\_\_\_

For and behalf of the Bank

Bank Signatory: \_\_\_\_\_

Bank Signatory: \_\_\_\_\_

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

Bank's seal or stamp

## Pro forma Retention Money Guarantee (may be used when Option X16 applies)

(to be reproduced exactly as shown below on the letterhead of the Bank providing the Guarantee)

**Eskom Holdings SOC Limited**  
**Megawatt Park**  
**Maxwell Drive**  
**Sandton**  
**Johannesburg**

Date:

Dear Sirs

Reference No. [●] [Drafting Note: Bank reference number to be inserted]

**Retention Money Guarantee:** [Drafting Note: Name of Contractor to be inserted]

Project [ ] : Contract Reference: [Drafting Note: Contractor contract reference number to be inserted]

---

1. In this Guarantee the following words and expressions shall have the following meanings:-
  - 1.1 "Bank" - means [●], [●] Branch, (Registration No. [●]); [Drafting Note: Name of Bank to be inserted]
  - 1.2 "Bank's Address" - means [●]; [Drafting Note: Bank's physical address to be inserted]
  - 1.3 "Contract" – means the written agreement relating to the Project, entered into between Eskom and the Contractor, on or about the [●] day of [●] 200[●] (Contract Reference No. .... as amended, varied, restated, novated or substituted from time to time; [Drafting Note: Signature Date and Contract reference number to be inserted])
  - 1.4 "Contractor" – means [●] a company registered in accordance with the laws of [●] under Registration Number [●]. [Drafting Note: Name and details of Contractor to be inserted]
  - 1.5 "Eskom" - means Eskom Holdings SOC Limited, a company registered in accordance with the laws of the Republic of South Africa under Registration Number 2002/015527/30
  - 1.6 "Expiry Date" - means the date on which the Defects Certificate is issued in terms of the Contract.
  - 1.7 "Guaranteed Sum" - means the sum of R [●] ([●] Rand); [Drafting Note: Insert amount of Retention Money Guarantee.].
  - 1.8 "Project" - means the.....
2. At the instance of the Contractor, we the undersigned \_\_\_\_\_ and \_\_\_\_\_, in our respective capacities as \_\_\_\_\_ and \_\_\_\_\_ of the Bank, and duly authorized thereto, confirm that we hold the Guaranteed Sum at the disposal of Eskom, as security for the proper performance by the Contractor of all of its obligations in terms of and arising from the Contract and hereby undertake to pay to Eskom, on written demand from Eskom received prior to the Expiry Date, any sum or sums not exceeding in total the Guaranteed Sum.
3. A demand for payment under this guarantee shall be made in writing at the Bank's address and shall:
  - 3.1 be signed on behalf of Eskom by a director of Eskom or his authorised delegate.

## ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

- 3.2 state the amount claimed ("the Demand Amount");
- 3.3 state that the Contractor has failed to carry out his obligation(s) to rectify certain defect(s) for which he is responsible under the Contract (and the nature of such defect(s)) alternatively that the Demand Amount is payable to Eskom in the circumstances contemplated in the Contract.
4. Notwithstanding the reference herein to the Contract the liability of the Bank in terms hereof is as principal and not as surety and the Bank's obligation/s to make payment:
- 4.1 is and shall be absolute provided demand is made in terms of this bond in all circumstances; and
- 4.2 is not, and shall not be construed to be, accessory or collateral on any basis whatsoever.
5. The Bank's obligations in terms of this Guarantee:
- 5.1 shall be restricted to the payment of money only and shall be limited to the maximum of the Guaranteed Sum; and
- 5.2 shall not be discharged and compliance with any demand for payment received by the Bank in terms hereof shall not be delayed by the fact that a dispute may exist between Eskom and the Contractor.
6. Eskom shall be entitled to arrange its affairs with the Contractor in any manner which it sees fit, without advising us and without affecting our liability under this Guarantee. This includes, without limitation, any extensions, indulgences, release or compromise granted to the Contractor or any variation under or to the Contract.
7. Should Eskom cede its rights against the Contractor to a third party where such cession is permitted under the Contract, then Eskom shall be entitled to cede to such third party the rights of Eskom under this Guarantee on written notification to the Bank of such cession.
8. This Guarantee:
- 8.1 shall expire on the Expiry Date until which time it is irrevocable;
- 8.2 is, save as provided for in 0 above, personal to Eskom and is neither negotiable nor transferable;
- 8.3 shall be returned to the Bank upon the earlier of payment of the full Guaranteed Sum or expiry hereof;
- 8.4 shall be regarded as a liquid document for the purpose of obtaining a court order; and
- 8.5 shall be governed by and construed in accordance with the law of the Republic of South Africa and shall be subject to the jurisdiction of the Courts of the Republic of South Africa.
- 8.6 Any claim which arises or demand for payment received after expiry date will be invalid and unenforceable.
9. The Bank chooses domicilium citandi et executandi for all purposes in connection with this Guarantee at the Bank's Address.

Signed at \_\_\_\_\_

Date \_\_\_\_\_ Bank's seal or stamp

For and behalf of the Bank

Bank Signatory: \_\_\_\_\_

Bank Signatory: \_\_\_\_\_

Witness: \_\_\_\_\_

Witness: \_\_\_\_\_

## PART 2: PRICING DATA

### ECC3 Option A

Document reference	Title	No of pages
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## C2.1 Pricing assumptions: Option A

### How work is priced and assessed for payment

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

<b>Identified and defined terms</b>	11	
	11.2	(20) The Activity Schedule is the <i>activity schedule</i> unless later changed in accordance with this contract.
		(27) The Price for Work Done to Date is the total of the Prices for <ul style="list-style-type: none"> <li>• each group of completed activities and</li> <li>• each completed activity which is not in a group.</li> </ul> <p>A completed activity is one which is without Defects which would either delay or be covered by immediately following work.</p>
		(30) The Prices are the lump sum prices for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

This confirms that Option A is a lump sum form of contract where the work is broken down into activities, each of which is priced by the tendering contractor as a lump sum. Only completed activities are assessed for payment at each assessment date; no part payment is made if the activity is not completed by the assessment date.

### Function of the Activity Schedule

Clause 54.1 in Option A states: "Information in the Activity Schedule 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 Activity Schedule 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 Activity Schedule. The Activity Schedule is only a pricing document.

### Link to the programme

Clause 31.4 states that "The *Contractor* provides information which shows how each activity on the Activity Schedule relates to the operations on each programme which he submits for acceptance". Ideally the tendering contractor will develop a high level programme first then resource each activity and thus arrive at the lump sum price for that activity both of which can be entered into the *activity schedule*.

### Preparing the *activity schedule*

Generally it is the tendering contractor who prepares the *activity schedule* by breaking down the work described within the Works Information into suitable activities which can be well defined, shown on a programme and priced as a lump sum.

The *Employer*, in his Instructions to Tenderers or in a Tender Schedule, may have listed some items that he requires the *Contractor* to include in his *activity schedule* and be priced accordingly.

It is assumed that in preparing his *activity schedule* the *Contractor*:

## ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION

- Has taken account of the guidance given in the ECC3 Guidance Notes pages 19 and 20;
- Understands the function of the Activity Schedule and how work is priced and paid for;
- Is aware of the need to link the Activity Schedule to activities shown on his programme;
- Has listed and priced activities in the *activity schedule* which are inclusive of everything necessary and incidental to Providing the Works in accordance with the Works Information, as it was at the time of tender, as well as correct any Defects not caused by an *Employer's* risk;
- Has priced work he decides not to show as a separate activity within the Prices of other listed activities in order to fulfil the obligation to complete the *works* for the tendered total of the Prices.
- Understands there is no adjustment to the lump sum Activity Schedule price if the amount, or quantity, of work within that activity later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event.

An activity schedule could have the following format:

Item No.	Programme Reference	Activity description	Price

**Note: Refer to Erica GIS guidelines for Pricing spreadsheet**

DESIGN AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS)  
SUBSTATION FOR ERICA MTS.

## C2.2 the *activity schedule*

Please see attached "ERICA GIS\_PRICING SCHEDULE FOR EPC TENDER.xlsx v1"

Please note that the tenderer is not obliged to use this template for Activity Schedule. It is provided for guideline purposes.

## PART 3: SCOPE OF WORK

PART C3: SCOPE OF WORK	2	C3 ECC3 COVER PAGE
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### C3.1: EMPLOYER'S WORKS INFORMATION

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**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****1. Background**

Eskom Transmission's current installed base of Protection, Telecommunications, Metering, (tele)Control and associated equipment (PTM&C equipment) has typically been procured through a 2-stage procurement mechanism:

- Development contract, where a supplier will develop a product to meet Eskom's requirements and the product undergoes substantial acceptance testing before being accepted by Eskom. This may run for periods of up to 2 years or more in certain instances;
- Supply contract, where a supplier will supply products to Eskom as developed, tested and accepted during the development contract.

Product standardisation forms the backbone of Eskom Transmission's efforts to reduce the burden associated with sustaining the infrastructure and as such the above contracting may typically be extended for periods up to 10 years. Manufacturer specific interfacing may also dictate that only specific supplier's products can be used for infrastructure extension projects to ensure compatibility with the existing installed base.

Eskom's specification and adjudication criteria for PTM&C equipment in this enquiry are based on Eskom's deemed optimal approach (time and cost) to procure / engineer accepted products that are compatible with existing infrastructure and is prescriptive only in this regard. Products other than those previously accepted, as discussed above, would necessitate an extensive testing and acceptance process as well as the development of associated design base documentation to support the configuration, operation and maintenance of the products. In addition, experience has shown that constructive involvement by Eskom during development greatly accelerates the development timeframes and, as such, this has also been specified where relevant in this scope of work.

Tenderers are advised that if they have alternative technology which they may deem appropriate for the current scope of works, they are at liberty to bring this to Eskom's attention as a proposal. The use of technology which has not been tested and accepted by Eskom may delay the project and may have cost implications, which delays will impact the delivery timelines, and which additional costs will be for the tenderer's account. No product which is proposed as an alternative technology as contemplated shall be supplied or used in respect of the works unless accepted by Eskom in writing.

**Note:** The above must be read in conjunction with Engineering Specifications and Evaluation Criteria.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****2. Description of the works****2.1 Executive overview**

The employer requires the works to resolve the problems experienced in the Peninsula Area, especially the supply of power to the City of Cape Town (CoCT) Network. The preferred option to address this is the establishment of a Transmission substation, Erica Substation, close to the existing CoCT's Mitchells Plain Substation. Erica Substation will de-load Philippi Substation and cater for load growth due to new projects within the CoCT network.

The scope of the network strengthening programme aims to establish the Erica Substation and integrate it into the network via a suitable Loop-In Loop-Out (LILO) line. The Erica Substation will first be energised from the Philippi Substation by means of constructing a 10 km 400kV single circuit line (which is not part of this scope of work for this contract).

**2.2 Scope of work**

The detailed scope of work document is attached hereto the works information **Annexure A**. The scope of work includes the procurement, construction and commissioning of the Erica Substation.

The identified Transmission scope of work for the Execution Stage is as follows:

- 1) The construction of new 400/132kV substation building including earthworks.
- 2) The design, manufacture, supply and installation of a new 400kV and 132kV GIS system.
- 3) The supply and installation of new 2 x 400/132/22kV 500 MVA Transformers
- 4) The supply and installation of new 2 x 22kV/400V 500KVA Auxiliary Transformers
- 5) The supply and installation of protection schemes
- 6) Erection and earthing for 400kV GIS bays.
  - a. For Feeders: 1 x feeder to be equipped and 1 x spare feeder and 2 x future feeders.
  - b. For Transformer bay: 2 x bays to be equipped and 2 x future.
- 7) Erection and Earthing for 4 x 132kV Feeder bays.
- 8) Provide for 6 x future 132 kV GIS feeder bays.
- 9) Design, supply, installation and commissioning of integrated security system, non-lethal energised perimeter detection system and perimeter lighting.

The PTM&C scope of work for the project is the provision of a complete turnkey protection, tele-control, remote-engineering / monitoring, measurements, metering, DC, teleprotection and telecommunications solution for the proposed Erica substation (station electric diagram) below, aligned with Eskom's current methodologies in this regard. Further detail provided below.

Standard previously tested and Eskom approved solutions are to be utilised. Where specific schemes / solutions don't exist and development is required, this shall be kept to a minimum and based as much as possible on the existing platforms.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION**

The scope of works includes the:

- Engineering, to be accepted by Eskom and approval responsibility of the successful tenderer.
- Sourcing of standard solutions
- Where standard solutions don't exist, scheme design, manufacturing, testing at works, in-situ testing, development of user documentation and training; to be accepted by Eskom
- Supply of all material,
- Delivery, off-loading, erection, installation, cabling, application of configurations and settings, commissioning; to be accepted by Eskom
- Provision of documentation, as-built drawings, configurations, protection settings; in Eskom standard format and to be accepted by Eskom
- Anything else deemed necessary by the tenderer for the provision of a working solution
- Decommissioning of all existing equipment in the existing control room with all associated works.

**2.3 Employer's objectives and purpose of the works**

The objective of the Erica Substation is to de-load Philippi Substation and cater for load growth due to new projects within the CoCT network. Eskom Distribution has also planned several projects which are dependent on the establishment of the Erica Substation.

The objectives of the team to realise the Project Objectives are as follow:

- Complete Erica Substation project as per approved Project Schedule.
- Complete the Erica Substation project within the specified Cost Estimate.
- Develop and construct the project within the Health and Safety specification as to meet Eskom's Zero Harm goal.
- Construct the Erica Substation within the applicable Environmental Authorisation (EA) and other Approval / Permits, WUL Report with Water use license conditions, EIA Report, EMP, Aquatic Biodiversity Assessment Report, environmental legislation, regulations, guidelines, procedures and all other statutory requirements. No Construction activities may occur without the WUL (Water Use Licence)

**2.4 Interpretation and terminology**

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
OPGW	Optical fibre ground wire
E/W	Earthwire
SHERQ	Safety, Health, Environmental, Risk and Quality
AFC	Approved for construction
B-BBEE	Broad Based Black Economic Empowerment
DCP	Dynamic Cone Penetrometer
DOL	Department of Labour
EMP	Environmental Management Plan
HV	High Voltage
NCR	Non-Conformance Report
OBL	Outside battery limits

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ROD	Record of Decision
SD&L	Skills Development & Localisation
SHE	Safety Health and Environment
SHEQ	Safety, Health, Environmental & Quality
TMH	Technical Methods for Highways
TOC	Top of Concrete
ARC	Auto re-closing (i.e. and O-CO operation under command of a relay)
BZ	Bus Zone
CB	Circuit breaker
CT	Current transformer
GIS	Gas Insulated Switchgear
I	Amps
KIPTS	Natural ageing and pollution performance test procedure for outdoor insulator products
EMC	Electro Magnetic Compatibility
M	Metering
MCB	Miniature circuit breaker
MR	Multi ratio
MVA	Mega Volt Amps
N/C	Normally Closed
N/O	Normally open
OEM	Original Equipment Manufacturer
OHS Act	Occupational Health and Safety (OHS) Act No 85 Of 1993, as amended, of the Republic of South Africa
P	Protection
FMECA	Failure Modes, Effects and Criticality Analysis
SF6	Sulphur Hexafluoride
T	Turns
TRFR	Transformer
V	Volts
VT	Voltage transformer

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****3. Management and start up.****3.1 Management meetings**

Regular meetings of a general nature may be convened and chaired by the *Project Manager* as follows:

<b>Title and purpose</b>	<b>Approximate time &amp; interval</b>	<b>Location</b>	<b>Attendance by:</b>
Risk Reduction Meeting	As per NEC 3 procedure	<b>Site or where instructed by the <i>Project Manager</i></b>	<i>Employer;</i> <b>Project Manager</b> <b>(Supervisor &amp; SHE officer) optional</b> <i>Contractor;</i> <ul style="list-style-type: none"> <li><b>Project Director, Site Manager, Contract Manager, Site Supervisor/s, Scheduler and SHE Manager</b></li> </ul>
Progress meetings	Monthly or as instructed by the <i>Project Manager</i>	<b>Site or as instructed by the <i>Project Manager</i></b>	<i>Employer;</i> <b>Project Manager</b> <b>(Supervisor &amp; SHE officer) optional</b> <i>Contractor;</i> <ul style="list-style-type: none"> <li><b>Project Director, Site Manager, Contract Manager, Site Supervisor/s, Scheduler and SHE Manager</b></li> </ul>
Integration Meeting	Monthly or as instructed by the <i>Project Manager</i>	<b>Site or as instructed by the <i>Project Manager</i></b>	<i>Employer;</i> <b>Project Manager</b> <b>Supervisor</b> <b>SHE officer</b> <i>Contractor;</i> <b>Project Director, Site Manager, Contract Manager, Site Supervisor/s, Scheduler and SHE Manager</b>
Health, Safety and Environmental meetings	As stipulated in Form 74 (SHE specification)	<b>Site or as instructed by the <i>Project Manager</i></b>	<b>As stipulated in Form 74 (SHE specification)</b>

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings shall be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

The *Project Manager* prepares minutes of meetings for all meetings held between *Employer* and *Contractor*.

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The minutes of a meeting contain all significant aspects of the meeting recorded together with any actions placed and is presented to the *Contractor* for signature at the next project meeting. After the *Contractor* has signed the minutes of meeting, the minutes are to be officially published.

The *Contractor* shall attend regular site meetings with the *Project Manager* and *Supervisor* where the progress of construction will be reviewed. Such meetings shall be held monthly and may be attended by representatives of the *Employer*.

The *Contractor* shall also attend weekly meetings with the *Supervisor* and provide, prior to each meeting as required by the *Project Manager*, detailed programmes showing separately the various activities of the *Contractor* anticipated over the forthcoming two week period as well as the progress achieved over the preceding week relative to the programme applicable to that period.

**3.2 Documentation control**

The *Contractor* shall submit all documentation to the *Project Manager's* requirements. All relevant documentation and drawings, including revisions, will be issued to the *Contractor*, but control, maintenance and handling of these documents will be the *Contractor's* sole responsibility and at its expense, and managed with a suitable document control system developed by the *Contractor* and accepted by the *Project Manager*.

**3.3 Contractual correspondence;**

- Properly compiled letters on official Company letter head or forms attached to an e-mail and not as a message in an e-mail itself.
- Alpha numeric identification – Reference: Date / Erica Substation / Communication number e.g. 20200615/ERICA/02.
- All correspondence to be addressed to the *Project Manager*.
- Contractual form to be used (attached)
- ECC – instructions by the SS (*Supervisor*)
- ECC- instruction by the PM (*Project Manager*)
- ECC – Notification of Defects
- ECC – Risk Register
- ECC- Early warning by PM
- ECC – Early warning by *Contractor*
- ECC – Notification of CE (Compensation Event) by the *Contractor*
- ECC- Submission by *Contractor* for acceptance by the PM
- ECC – Completion Certificate
- ECC –Quotation for the proposed instruction of changed decisions

**3.4 Site communication;**

- Site instructions issued by the *Supervisor*.
- Site Memorandums addressed to the *Supervisor*.
- *Contractor* Daily Site Diary (Minimum *Employer* requirements on *Contractor* Daily Site Diary are);
  1. Contract No.
  2. Date
  3. Work Hours – Start, Finish and Overtime
  4. Rainfall (mm)
  5. Temperature
  6. Visitors to site
  7. *Contractor* employees on site and description (Site Agent, Foreman, Skilled, etc.)
  8. List of Plant and Equipment
  9. Brief description of the day's activities
  10. Toolbox talk topic
  11. Diary signed daily by *Employer* Site Manager/*Supervisor* and *Contractor* – Contract Manager/Site Agent

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12. Daily *Contractor* attendance register to be attached to the Daily Site Diary.
- Site instructions issued by the *Supervisor*.
  - Site Memorandums addressed to the *Supervisor*

**3.5 Summary of the documentation required from the *Contractor* before and during construction includes the following:**

DOCUMENT	Before	During
Programme	X	X
Resource Schedule	X	X
Health and Safety Plan	X	
Quality Assurance Plan	X	
Method Statements	X	
Materials Inventory		X
Drawing Register		X
Progress Schedule		X
Application for Payment		X
Geotechnical and Foundation design reports	X	
Soil Test Results	X	
Concrete Batching note		X
Cube Test Reports		X
Weather Data		X
Monthly Safety Report		X
Inventory list of all materials		X
Foundation photographs		X

**3.6 Communication**

- All correspondence from the *Contractor* is signed by the *Contractor's* authorised representative.
- Correspondence from the *Project Manager* is issued and signed in the name of the *Project Manager* or his authorised representative.
- All formal correspondence from the *Contractor* is addressed to the *Project Manager* or his authorised representative and delivered to the *Project Manager* or his authorised representative.
- Emails and other forms of electronic communication (collectively referred to herein as *emails*) between the *Contractor* and the *Project Manager* are for the expedient transfer of preliminary technical data and non-contractual information only.
- The *Contractor* provides all contractually required submittals, notifications and the like by means of official correspondence or formal document transmittal.
- Emails or documentation included therein, sent from the *Project Manager* to the *Contractor* do not, in themselves, constitute either acceptance of a proposal from the *Contractor* or an instruction under the terms of the contract either of which may be or may result in a compensation event to the contract.
- The *Contractor* does not act on any email that the *Contractor* believes results in a compensation event to the contract whether or not the email by the *Project Manager* stated that it constituted a compensation event. The *Contractor* requests formal written confirmation of any instruction that may be or may result in a compensation event and receives this confirmation through formal correspondence, document transmittal, and *Project Manager's* instruction or compensation event, before acting on such an instruction.
- Signature authorities
  - The *Contractor* provides, a "Signature Authorization Form", the names and specimen signatures of those individuals within the *Contractor's* organization authorized to sign documents on behalf of the *Contractor*. The *Contractor* also specifies the financial or other limits of authority for each individual.

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- The *Contractor* delegate's authority within its organization to home office and field office personnel as required for effective performance of the work.
- The *Contractor's* Contract Signatory signs the "Signature Authorization Form".

### 3.7 Drawings and Document Transmittals

#### Documentation Requirements

The *Contractor* submits all documentation conforming to the requirements of the *Employer and / or the Project Manager* applicable standards and specifications with the following specific requirements:

- When required, the *Contractor* transmits to the *Employer / Project Manager*, technical submissions, sketches or drawings, calculations and other pertinent data, in sufficient detail to enable the *Employer / Project Manager* to review the information and determine that the *Contractor* clearly understands the requirements of the contract.
- Documents and data provided by the *Contractor* under the contract are subject to the *Employer / Project Manager* review and accept prior to *Contractor's* start of procurement.
- Review and acceptance of drawings, documents and / or data, etc. by the *Employer / Project Manager*, does not absolve the *Contractor* from any responsibilities under this contract.
- The review by the *Employer / Project Manager* with or without comments does not relieve the *Contractor* of any obligations or requirements under the contract nor be construed as an authorization of, or consent to, any deviation from the contract. If the *Contractor* considers that the *Employer / Project Manager* comments constitute a compensation event to the contract, the *Contractor* requests a formal instruction.
- All drawings and other documents are in English and are sized in accordance with metric standard sizes and carry titles to indicate equipment numbers or any other identification number of the portion of work covered on the particular drawing and / or document.
- The revision number marks changes or additions to any document, at the point of a revision, and the revision is reflected in its title block or drawing number by an appropriate revision indication.
- An Aconex transmittal summarizing the content of the set accompanies multiple sheets with the same drawing number.
- The format of electronic documentation conforms to the following requirements:

Document	Native Format	Issued to <i>Employer</i>
Specifications	MS Word 2007	Native & PDF
Manuals	MS Word 2007	Native & PDF
Datasheets	Microsoft Excel 2007	Native & PDF
Programs	Primavera P6 or MS Projects	Native & PDF
Spreadsheets	MS Excel 2007	Native & PDF
Drawings	AutoCAD Release 2004 or later	Native & PDF
Other Documentation	Microsoft Office 2007compliant	Native & PDF

- The *Contractor* is, in interpreting the drawings and specifications, bound by the figures marked thereon and not by scaled measurements.
- If the *Contractor* believes that new or revised IFC (issued for construction) documents constitute a change to the Contract, the *Contractor* notifies *Employer / Project Manager* of the change and does not proceed with the changes until officially instructed to do so by the *Employer / Project Manager*.
- The *Employer / Project Manager* reviews engineering information or queries raised and returns comments to the *Contractor* within the period of reply. This review by the *Employer / Project*

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*Manager* does not relieve the *Contractor* of his responsibility to ensure that the package is in accordance with the requirements.

- The *Contractor* submits a written signed off As built as final issue of the "Handover" documentation.

**3.8 Design Specifications**

The following is a list of specifications and standards applicable to the Erica Substation project.

Specification document	Specification number	Title
1 GIS MTS	240-50807380	Specification for Gas Insulated Switchgear (GIS) and Associated Auxiliary Equipment
2 Power Transformers	240-68973110	Specification for Power Transformers Rated for 1.25MVA and Above and with Highest Voltage Of 2.2KV or Above
	240-56062720	Oil Sampling Points Label Standard
	240-56063843	Analogue Oil and Winding Temperature Guages for Transformer and Reactors Specification
	240-56063871	Pressure Relief Devices (PRD) Fitted to Transformers and Reactors Specification
	240-56063908	Oil and Gas Actuated (Buchholz) Relays Fitted to Transformers and Reactors Specification
	240-56356191	Transformer and reactor Oil Level Indicators Specification
	240-56356202	Bag Leak Detector Specification
	240-56535946	Transformer and Reactor Cooling Fans Specification
	240-56062529	Passive Dehydrating Breathers Fitted to Transformers, Reactors and On-Load Tapchangers Specification
	240-68973110	Specification for Power Transformers Rated for 1.25MVA and Above and with Highest Voltage of 2.2kV or Above
	240-56030645	Eskom Standard for Capacitor Voltage Transformers
	240-56062765	Eskom Standard for Inductive Voltage Transformers up to 132kV
	240-56062864	Eskom Standard for Current Transformers up to 132kV
	240-57648739	Power Line Carrier Line Traps and Associated Post Support Insulators Standard
	240-170000559	Eskom Standard for Top Core Current Transformers Rated from 132kV up to 765kV
3 PTM&C	240-171000109	High Level Scope of Work PTM&C Equipment for Erica Substation

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	WMIT12P01-P-D87 – Erica  240-135101235	PTM&C Detail Design Document: City Of Cape Town Strengthening (Erica Substation) Application Design for: Erica SS Comms (EPC Version)
4	SDL&I	240-148918142 Supplier Development, Localization and Industrialization (SDL&I) Strategy
5	Earth and Civil Works	Part of contractor scope of works Control room drawings, Concrete Road drawing and Transformer plinth drawing
6	Building	WMIT12P01-SE-D53 Functional Specification for the Design and Construction of the 400/132kV GIS and Control Building for Erica Substation
7	Stringing, Cabling and Electrical	240-82736997 Stringing, Cabling, Earthing and Erection Specification for Transmission Substations
8	Health and Safety	TPDMAN-SP-84 Health and Safety Specification Erica Substation
		TPD-BRA-240- 70044602 Baseline risk assessment
9	Environmental	May 2022; May 2022 Update January 2023 Aquatic Biodiversity Assessment Reports  Environmental Authorisation (EA), WUL (Water Use Licence) Outstanding, EIA Report, EMPr
10	Quality	240-105658000 Supplier Quality Management Specification 240-161444027 Supplier Quality Management Specification
		Quality Plan; Erica Substation and Erica-Philippi 400kV Line
11	Security Systems	240-170001112 SOW for Integrated Physical Security System at Erica Substation
		240-170001114 SOW for NLEPDS at Erica Substation
		240-139282493 Security Lighting for Eskom Applications
		240-83382076 Standard for Operational Floodlighting in Transmission Substations
12	Primary Plant	240-53113923 Specification for Substation Clamps for Tube Aluminium Conductors
		240-53113927 Specification for Substation Clamps for Stranded Aluminium Conductors
		240-171000067 Specification for Substation Tubular Conductors

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	240-82736997	Stringing, Cabling, Earthing and Erection
		Specification for Transmission Substations
	240-122922610	Specification for Substation Tubular Conductors
	240-170001073	Transmission: Substation Engineering: Functional Parameters
	240-56062705	RTV Silicone Rubber Insulator Coating and Shed Extender Supplier Standard
	240-56063877	RTV Silicone Rubber Insulator Coating and Shed Extender Application Standard
	240-75540566	Specification for Station Class Metal Oxide Surge Arresters
	240-56030435	Outdoor Ceramic Station Post Insulators for Systems with Nominal Voltages up to 765kV Specification
	240-180200051	Eskom Transmission List of Pre-Approved HV Equipment
	240-180000668	Standard on how Contractors Can Select Material to Use to Build the Substations or Infrastructure on the Self-Build or EPC

**3.9 Health and safety risk management**

The *Contractor* shall comply with the health and safety requirements contained in Annexure (TPDMAN-SP-84-SHE Specification City of Cape Town Tower Strengthening Project) to this Works Information and all the other documents the specification refers.

The *Contractor* shall also ensure and allow for in his pricing structure that all Personal Protective Equipment (PPE) issued to his employees are in accordance with the *Employer's* Personal Protective Equipment Specification (240-44175132).

**In accordance with Eskom internal procedure and wherever Health and Safety Issues are concerned:**

- The Executive projects manager, BU will induct the *Contractor* MD before commencement of work on site. This will assist in ensuring that the MD gets first-hand information of requirements
- Site managers, Site *Supervisors*, including site representatives shall be required to conduct 1 VFL per day.
- The *Contractor* shall allow for work stoppages as per the Health and Safety specification
- The MD is required to conduct 2 Visible Felt Leadership per month.
- Site *Supervisors* shall conduct behaviour based safety observation. The client will provide training on request.
- The *Contractor* shall present all lost time incident and medical incidents to the *Employer*, the presentation of all incidents shall be done within 30days of the incident. All incidents shall be presented by the *Contractor's* MD to the *Employer*.

**In addition to the above, the following shall apply:**

During construction, all workers on structures shall use the following:

- Full body harnesses
- Double Lanyards
- Double climbing hooks, alternatively fall arrest system approved by the *Employer*.
- The fall arrest system is to be installed and used prior to any erection, dressing or stringing operations.

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- When working on towers, only head protecting helmets that conform to Standard Reference Number EN 12492:2000 - Mountaineering equipment - Helmets for mountaineers - or EN 397:2000 Industrial Safety Helmets are acceptable. In addition, the requirements of SABS 0333:1999 part 3 and SABS 1833:1999 shall apply.

The *Contractor* shall supply his Health and Safety Plan in accordance with the Occupational Health and Safety Act and the latest revised Construction Regulations prior to the commencement of work on Site.

The *Contractor* shall supply the *Project Manager* with a monthly safety report indicating the total number of employees on site, the number of hours worked, the number of hours lost due to injury and details of any incidents/accidents.

Minutes of Safety Meetings are forwarded to the *Project Manager*.  
Reporting of incidents shall be in accordance with *Employer's* procedure.

**Termination due to Non-Compliance.**

The *Employer* reserves the right to terminate the contract in the event that the *Contractor* is found to be consistently non-compliant to any SHEQ related issue.

**Penalty for Health and Safety statistics**

Should the LTIR at any stage during the contract exceed the *Employer's* target of 0,4 a penalty of R100,000.00 will be imposed by the *Employer*. This penalty will be refunded in the event that the LTIR drops below 0,3 at contract completion.

**Penalties Health and Safety violations**

The following penalties will apply for Health and Safety violations and are non – refundable:

- The *Employer's* Life Saving rules violation (1st Violation): R5, 000.00 per event, payable by the *Contractor*.
- The *Employer's* Life Saving rules violation (2nd Violation): Removal of repeat offender from Site and R10, 000.00 payable by the *Contractor*.

**Penalties for Sub – Contractor management**

- Sub-Contractors are to be managed in accordance with the requirements of the *Employer's* SHE Specification (TPDMAN-SP-08). Failure to comply will result in a fine of R10, 000.00 per non-compliance.

All the above penalties will be implemented by the *Project Manager* at his discretion after all necessary investigation has been finalised.

**3.10 Environmental constraints and management**

- The Contractor shall comply with the environmental criteria and constraints stated in TPDMAN-ST-37 Environmental requirements for contractor and the applicable Environmental Authorisation and other Permits, WUL Report with Water use license conditions, EIA Report, EMP, Aquatic Biodiversity Assessment Report, environmental legislation, regulations, guidelines, procedures and all other statutory requirements for the Erica Substation project. No Construction activities may occur without the WUL (Water Use Licence)

The following penalties will apply for Environmental non-compliance and are non-refundable:

**Penalties for Environmental related issues**

- Legal contravention and non-compliance: R20, 000.00 per event.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****Campsite Layout**

- Campsite establishment and de-establishment is to be managed in accordance with the SHE specification.
- The layout should be such that it facilitates a circular traffic route that eliminates the need to reverse when loading and offloading. There must be one point of entry and exit
- The Contractor shall comply with the environmental criteria and constraints stated in Annexures as per the Environmental Authorisation and other Permits, WUL Report with Water use license conditions, EIA Report, EMP, Aquatic Biodiversity Assessment Report, environmental legislation, regulations, guidelines, procedures and all other statutory requirements for the Erica Substation project.
- The Contractor must also comply with the following environmental procedures: Environmental requirements for Contractors and suppliers TPDMAN-ST-37..

**3.11 Quality assurance requirements**

The *Contractor* and all sub-*Contractors* shall comply with the requirements listed in the *Employer's* Quality requirement standard, 'Supplier Contract Quality Requirements Specification', document identifier 240-105658000 Supplier Quality Management Specification

The following penalties will apply for Quality and are non – refundable:

**Penalties for Quality related issues**

- NCR's not closed out satisfactorily within 30 days: R10, 000.00 per event.

In addition to the above, the following shall apply:

- The *Contractor* shall have a fully documented, implemented and maintained quality management system, which complies with the requirements of the ISO 9001:2015 or their quality management system shall carry valid certification from an acceptable QMS Certification body as indicated in the applicable PDP invitation. . The *Supervisor* may instruct the *Contractor* to perform quality inspections prior to his own inspections, or to assist in inspections.
- The Contractor ensures that his staff and sub-Contractors are conversant with the content of the scope of work, quality control plans and work instructions.
- The involvement of the Contractor's Appointed Inspection Authority (AIA) is a requirement to ensure that all the conditions of the code are met, but this does not absolve the Contractor from any of his responsibilities for quality.
- The Contractor compiles, in conjunction with the Project Manager and his AIA, a product inspection and test plan. This document shows at which stages during the contract the AIA is required, and what types of inspection, testing, witnessing etc. are carried out to ensure that the requirements of the works information are met.
- The Contractor ensures that the works is carried out in accordance with the inspection and test plans, acceptance test procedures and other specifications in the works information.
- The Contractor ensures that all specifications and requirements are communicated to the relevant parties in his organisation. Copies of all relevant specifications and drawings must be available on site.
- All documentation has a clearly stated revision number and previously similar documentation is revoked.
- Any quality-related problems/issues are to be reported to the Supervisor immediately and resolved as soon as possible.
- All completed work is signed-off on inspection and test plans and control sheets on a daily basis and all the relevant signatures are on the documentation.

The *Contractor* must comply with the following quality procedure: 240-105658000 Supplier Quality Management Specification.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****3.12 Programming constraints**

The programme is to be submitted for acceptance in accordance with Core Clause 31 in the Engineering and Construction Contract, in terms of which resources to complete each activity must be clearly identified. The *Contractor* will allow two weeks of the starting date for compiling a schedule to be reviewed by Eskom every two weeks to ensure accuracy. The *Contractor* will be expected to use the allowed time from start date to prepare a proper schedule by interfacing with all relevant stakeholders. It is suggested that Gantt or bar chart formats be used for project planning, while progress graphs/schedules be submitted at monthly project meetings to monitor progress.

The programme is to include all the requirements of clause 31.2 of the Engineering and Construction Contract.

**Progress**

Eskom will monitor the process of compiling a schedule in the first three months of the contract on a weekly basis by means of a report from the *Contractor*. A weekly progress report is to be submitted to the *Project Manager* every Friday.

The *Contractor* monitors progress weekly in conjunction with the *Supervisor*. A weekly progress report is to be submitted to the *Project Manager* every Friday.

The *Contractor* submits his record of Work Done to Date (verified by the *Supervisor*) to the *Project Manager* on the 20th of each month. (The application is to have the same format as the relevant Activity Schedule, and show present, previous and total quantities to date).

**3.13 Contractor's management, supervision and key people**

The *Contractor* shall submit an organizational structure showing his human resources and their lines of authority/communication.

The *Contractor* shall ensure that they comply with the registration of identified personnel as per the requirements of the South African Council for the Project and Construction Management Professions (SACPCMP) as gazetted in Project and Construction Management Professions Act No. 48 of 2000, Section 18(1) (a) or (b) and (c).

The following are the categories that must be registered and their certificates be downloaded from privyseal ([www.privyseal.com](http://www.privyseal.com)) and be submitted:

- Construction Manager (CM), reference to Construction Regulation GNR. 84 of 7 February 2014 section 8(1), in terms of appointment and registration in terms section 18(1) (c) of the Act 48 of 2000.
- Construction Health and Safety Manager (CHSM), registration in terms section 18(1) (c) of the Act 48 of 2000.
- Construction Health and Safety Officer (CHSO), reference to Construction Regulations GNR.84 of 7 February 2014 section 8(6), and in terms section 18(1)(c) of the Act 48 of 2000.

Note:

- Alternate Construction Manager, reference to Construction Regulations GNR.84 of 7 February 2014 section 8(1), shall be registered with SACPCMP should the person be appointed as Alternate Construction Manager.
- Consideration shall be made to those who are registered as Candidate in any of the categories mentioned above, provided that the individual candidate submit an agreement (appointment) between the candidate and the mentor. Both the candidate and the mentor shall submit their certificates downloaded from privyseal ([www.privyseal.com](http://www.privyseal.com))

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The *Contractor* shall provide CV's for acceptance to Eskom for experienced and competent personnel in the following key positions:

- **Project Manager/s**  
Minimum competency level: National Diploma Engineering/Construction Management. The resource will have a minimum of 15 years relevant experience.
- **Construction Manager/s**  
Minimum competency level: National Diploma Engineering/Construction Management or a minimum of 10 years relevant construction experience for the approval of the *Project Manager*.
- **Planner/Scheduler**  
Minimum competency level: 10 years relevant construction **planning** experience for the approval of the *Project Manager* and Planning Manager. Primavera/MS projects competence.
- **Supervisors**  
Minimum competency level: As specified in Form PDPMAN-FM-074 (SHE Specification) and the documents it is referring to.
- **Required SHE personnel**  
Minimum competency level: As specified in Form PDPMAN-FM-074 (SHE Specification) and the documents it is referring to.

**3.14 Invoicing and payment**

Within one week of receiving a payment certificate in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the payment certificate.

The *Contractor* shall address the tax invoice to

**Eskom Holdings SOC Limited**  
**P O Box 1091**  
**Johannesburg**  
**2000**

and include on each invoice the following information:

- Name and address of the *Contractor*;
- The contract number and title;
- *Contractor's* VAT registration number;
- The *Employer's* VAT registration number **4740101508**;
- Description of service provided for each item invoiced based on the Price List;
- Previous, present and to date values per payment certificate;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
- Any other information as may be required.

An original invoice must be sent to the Accounts Payable Department and a copy to the *Project Manager*.

The *Contractor* must submit an Forecasted Rate of Invoicing (FRI) within 1 week of contract award.

Details on how to submit invoices and additional information:

The *Contractor* must ensure that the Eskom order number is clearly indicated on your invoice together with the line number on the order you are billing for.

All Electronic invoices must be sent in PDF format only.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION**

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.

The *Contractors* E-mail may contain more than one PDF file (e.g. 2 invoices on 2 separate PDF files in one e-mail)

Send all invoices in PDF to the following email addresses:

1. For local invoices: [invoiceseskomlocal@eskom.co.za](mailto:invoiceseskomlocal@eskom.co.za)
2. For foreign invoices: [Invoicesgrpcapital@eskom.co.za](mailto:Invoicesgrpcapital@eskom.co.za)

The *Contractor* can request a park invoice from the Finance Shared Services (FSS) contact center which can then be followed up and corrected. The *Contractor* is welcome to forward the details of invoices to the FSS contact center.

All queries and follow up on local invoice payments should be made by contacting the FSS contact center  
Tel: 011 800 5060  
e-mail: [fss@eskom.co.za](mailto:fss@eskom.co.za)

For Foreign invoices, the *Contractor* 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.

The *Contractor* can send the invoice copy to the email addresses indicated below).

#### 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."

If there is Cost Price Adjustment (CPA) on your invoice we recommend that the *Contractor* issue a separate invoice for CPA so that if there are any issues on the CPA the rest of the invoice can be paid while resolving the CPA issues.

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.

The *Contractor* can request a park invoice report from the Finance Shared Services (FSS) contact center which can then be followed up and corrected. The *Contractor* is welcome to forward the details of invoices corrected to the FSS contact center.

Email addresses for invoice submission:  
Group Capital Power Delivery Projects (PDP): [invoicesgrpcapitalPDP@eskom.co.za](mailto:invoicesgrpcapitalPDP@eskom.co.za)

#### Procedure for invoice payment:

Work done is assessed by Quantity Surveyor (QS), after which the Eskom QS and the *Contractor* agree on the assessment and the amount to be invoiced. The Eskom QS will then generate an assessment and payment certificate aligning to the *Contractor's* invoice that was agreed based on the assessment.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION**

Assessment is scanned and sent to project officer and *Project Manager*. Originals to be filed in project file. Ensure that *Project Manager* signs off or approves the payment certificate before a Good Receipt (GR) is created. Goods receipt will be created on SAP and the goods receipt number emailed to the supplier. For work done GR number will be on payment certificate sent to supplier. Invoice is recorded and receipted as per the finance invoice receipting procedure.

**3.15 Insurance provided by the Employer**

As stipulated in the Contract Data.

**3.16 Contract change management**

As per NEC

**3.17 Provision of bonds and guarantees**

The form in which a bond or guarantee required by the *conditions of contract* (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

The *Employer* may withhold payment of amounts due to the *Contractor* until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the *Contractor* by the *Project Manager* to receive and accept such bond or guarantee. Such withholding of payment due to the *Contractor* does not affect the *Employer's* right to termination stated in this contract.

**3.18 Records of Defined Cost, payments & assessments of compensation events to be kept by the Contractor**

A risk register is to be kept by the *Contractor* in which all events are recorded. Records of events that could give rise to Compensation Events are to be kept up to date for inspection by the *Supervisor* and/or *Project Manager* at all times and this is to be kept in a risk register. This is not for inspection purposes but for management as per core clause 16.

**3.19 Training workshops and technology transfer**

The supplier shall provide training of an international standard on the supplied equipment by OEM accredited instructors. The training shall be in accordance with the Eskom training standard 240-56065202, and organised on the following levels:

- Orientation and basic functioning
- Operational and first line maintenance
- Installation, testing and commissioning of the GIS and circuits (controls)
- Specialized maintenance on all aspects of the GIS which must include major intrusive work, repair and testing

**4. Engineering and the Contractor's design****4.1 Employer's design**

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

**4.2 Parts of the works which the Contractor is to design**

Where the *Contractor* is to do designs, the *Contractor* shall submit designs for acceptance well in advance of construction in accordance to issued specifications with the tender.

The *Contractor* is responsible for the design of the 400/132kV GIS with associated building in accordance to (240-50807380) Specification for (GIS) and Associated Auxiliary Equipment and (WMIT12P01-SE-D53) Specifications for the design of Erica Substation GIS Buildings and the design of all other associated works as stipulated in the specifications.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****4.3 Procedure for submission and acceptance of *Contractor's* design**

As per specifications

**4.4 In accordance with the *Employer's* specifications and tender returnables which are provided to the *Contractor*. Other requirements of the *Contractor's* design**

- In accordance with the *Employer's* specifications which are provided to the *Contractor*.

**4.5 INTELLECTUAL PROPERTY RIGHTS**

The following provisions pertaining to the intellectual property rights regarding the Works will be applicable:

- "Intellectual Property" means (a) patents, trademarks, service marks, rights in designs, trade names, copyrights and topography rights, in each case whether registered or not; (b) applications for registration of any of them; (c) rights under licences and consents in relation to any of them; (d) all forms of protection of a similar nature or having equivalent or similar effect to any of them which may subsist anywhere in the world.
- All Intellectual Property rights, contained in any developed materials which are created by the *Contractor* or on behalf of the *Contractor*, for the purposes of and in support of the provision of the works vests with the *Contractor*. The *Contractor* retains the Intellectual Property rights in and to the *Contractor's* Intellectual Property made by or on behalf of the *Contractor* as part of the works.
- The *Contractor* gives to the *Employer* a non-terminable, transferable, non-exclusive, royalty-free licence, to copy, use and communicate the *Contractor's* documents containing Intellectual Property relating to the works (the "IP Documents"), including making and using modifications of them.
- This licence (a) applies throughout the actual or intended working life (whichever is longer) of the works; (b) entitles any person in proper possession of the relevant part of the works, to copy, use and communicate the IP Documents for the purposes of completing, operating, using, maintaining, altering, adjusting, repairing, refurbishing and demolishing the works (the "Purposes"); and (c) in the case of IP Documents which are in the form of computer programs and other software, permit their copying, use and communication for the Purposes.
- The IP Documents are not, without the *Contractor's* written consent, used, copied or communicated to a third party by or on behalf of the *Employer* for any purpose other than the Purposes.
- The *Contractor* procures that each Sub-*Contractor* executes all and any IP Documents and take all and any other actions as may be required, in order to give effect to this licence. The *Employer* retains all Intellectual Property rights in all documents made by or on behalf of the *Employer* including all documents and requirements provided prior to or during the execution of the works. The *Contractor* does not, without the written consent, of the *Employer*, copy, use or issue to a third party any of these document and requirements except for the purposes of executing the works.
- Either party procures that any third party executes confidentiality undertakings not to disclose to any other third parties, any of the *Employer's* documents and requirements at all, in respect of the *Employer*, or the IP Documents other than for the Purposes, in respect of the *Contractor*.

**4.6 Design of Equipment**

The *Contractor* submits particulars of the design of an item of equipment for the *Project Manager* for review and acceptance if the design meets the *Employer's* specification.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****4.7 Equipment required to be included in the works**

The *Contractor* shall submit a list of all equipment and machinery required to execute the Works.

The *Contractor* shall use prequalified HV plant equipment suppliers as per below list

<b>400kV</b>	
<b>Name of Equipment/ Material</b>	<b>Description of the Equipment/ Material</b>
Capacitive Voltage Transformer	Nominal System Voltage $420/\sqrt{3}kV$ , Rated Secondary Voltage $110/\sqrt{3}V$ Reference Spec 240-56030645
Surge Arrester	Station Class Surge Arresters For 400kV System 31mm/kV, Reference Spec 240-75540566

<b>132kV</b>	
<b>Name of Equipment/ Material</b>	<b>Description of the Equipment/ Material</b>
Post Insulator	132kV, Classification C4-550, 31mm/kV, Top & Bottom PCD 127, Reference Spec 240-56030435
Earth Switch	132kV, 31mm/kV, 40kA, phase centre spacing 3000mm, Reference Spec 240-56063815
Current Transformer	132kV, Post Type, 31mm/kV, 2 Buszone (1/1200) (PX), 2 Protection (PX), 2 Metering (0.2), rated secondary current: 1A, rated primary current 2500A, 40kA, Reference Spec 240- 56062862 and 240-170000559
Conventional Isolator	132kV, 2 earth switch, 31mm/kV, rated primary current 2500A, 40kA, Reference Spec 240-56063815
Voltage Transformer	Nominal System Voltage $132/\sqrt{3}kV$ , Rated Secondary Voltage $110/\sqrt{3}V$ Reference Spec 240-56062765 in accordance with NRS030 Standard
Surge Arrester	Station Class Surge Arresters For 132kV System 31mm/kV, Reference Spec 240-75540566

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****4.8 As-built drawings, operating manuals and maintenance schedules**

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

Upon Completion the *Contractor* is to provide final "as built" records in accordance with the requirements as laid out below.

Two copies of Construction Records are to be compiled by the *Contractor* at the end of the project in a hard copy format. In addition, the *Contractor* is to supply a Compact Disk of the records to the *Project Manager*.

The Construction Records consists of the following information which originates from various parties as indicated below:

The *Contractor* compiles the document and submits copies to the *Employer* within four weeks after receipt of the relevant information.

**4.9 Use of Contractor's design**

The Contractor to allow the Employer to use detailed designs, drawings and all relevant documents for operational, maintenance purposes and for future developments whenever required. Copy rights to remain with the Employer.

**5. Procurement****5.1 People****5.1.1 Minimum requirements of people employed on the Site**

People employed on site shall have all relevant documents as required by law for employment within the country, i.e. relevant work permits and Identifications.

**5.1.2 BBBEE and preferencing scheme**

The contractor will be required to maintain or improve the BBBEE level for the duration of the contract.

**5.1.3 SUPPLIER DEVELOPMENT LOCALISATION AND INDUSTRIALISATION (SDL&I)**

SDL&I mandate is to achieve maximum and sustainable local development impact through leveraging Eskom's procurement spend in a manner that allows flexibility within the business in order to accommodate government local development initiatives and policies.

As a State-Owned Enterprise, ESKOM supports Government's socio-economic development initiatives that it addresses through Supplier Development and Localisation objectives, which include enterprise development, transfer of skills, job creation, incubation, localisation of procurement initiatives and industrialisation.

For the purposes of tendering, the *tenderer* must demonstrate the manner in which the SD&L requirements will be met in due course in an implementation program. If the *tender* is awarded all SD&L undertakings (the *Contractor's* SD&L Obligations) must be made by the *Contractor* at the time of contracting.

**5.1.3.1 SDL&I Undertaking**

- The SDL&I undertaking generally identifies the following areas for SDL&I evaluation. These are procurement from EMEs, QSEs, LMEs (Generic); local content of the tender as a whole; Job creation and Skills Development commitments of the *tenderer*.
- Targets and weighting are set for each individual project.
- Tenderers who complete and submit the undertaking as required, but who do not meet Eskom's targets, will not be disqualified. SDL&I undertakings do not form part of scoring but commitments will form part of contractual obligations.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****Definitions and Interpretation**

The definitions below shall be referred to in the interpretation of this document. The targets for EMEs, and QSEs are a percentage of the local content portion of the tender only.

**5.1.3.2 Exempted Micro Enterprise (EME)**

- In terms of the Generic Codes of Good Practice, an enterprise including a sole propriety with annual total revenue of R10 million or less qualifies as an EME.
- In instances where Sector Charters are developed to address the transformation challenges of specific sectors or industries, the threshold for qualification as an EME may be different from the generic threshold of R10 million. In such instances, the relevant Sector Charter thresholds will therefore be used as a basis for a potential bidder to qualify as an EME. (For example the approved thresholds for EMEs for the Tourism and Construction Sector Charters are R2.5 million and R1.5 million respectively).
- An EME automatically qualifies as a level 4 contributor with B-BBEE recognition level of 100% in terms of the Codes of Good Practice.
- An EME with at least 51% black ownership qualifies as Level 2 Contributor with B-BBEE level of 125% in terms of the Codes of Good Practice.
- An EME with 100% black ownership qualifies as a Level 1 contributor with B-BBEE level of 135% in terms of the Codes of Good Practice.
- An EME that is regarded as a specialized enterprise with at least 75% black beneficiaries qualifies as Level 1 contributor with B-BBEE level of 135% in terms of Codes of Good Practice.
- An EME that is regarded as a specialized enterprise with at least 51% black beneficiaries qualifies as a Level 2 contributor with B-BBEE level of 125% in terms of the Codes of Good Practice.
- An EME is required to submit a sworn affidavit confirming their annual total revenue of R10 million or less and level of black ownership to claim points as prescribed by regulation 6 and 7 of the Preferential Procurement Regulations 2017.

**5.1.3.3 Qualifying Small Enterprises (QSE)**

- The Codes define a QSE as any enterprise with annual total revenue of between R10 million and R50 million.
- A QSE with at least 51% black ownership qualifies as a Level 2 contributor.
- A QSE with 100% black ownership qualifies as a Level 1 Contributor.
- A QSE that is regarded as a specialized enterprise with at least 75% black beneficiaries qualifies as a Level 1 contributor with B-BBEE level of 135% in terms of the Codes of Good Practice.
- A QSE that is regarded as a specialized enterprise with at least 51% black beneficiaries qualifies as a Level 2 contributor with B-BBEE level of 125% in terms of the Codes of Good Practice.
- A QSE is required to submit a sworn affidavit confirming their annual total revenue of between R10 million and R50 million and level of black ownership or a B-BBEE level verification certificate to claim points as prescribed by regulation 6 and 7 of the Preferential Procurement Regulations 2017.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****5.1.3.4 Large Measured Entity (LME) /Generic**

- A generic Enterprise's B-BBEE compliance is measured using the Generic Scorecard. The Generic scorecard is based on five elements each of which has an assigned weighting which correlates with the importance of that specific element and a set target.
- A generic Enterprise has a annual turnover that is more than R 50 million rands.

**5.1.3.5 SDL&I Progress Report**

Means the *Contractor's* SDL&I progress report contemplated in clause 7 of this annexure.

**5.1.3.6 Local Content**

- Goods made in South Africa (from local raw materials).
- Only good that are made within the borders of SA can be claimed to be local content.
- Local Content (is mainly based on local manufacturing, there must be value addition to the product.
- LC is measured on the product which must be manufactured in South Africa at a specified minimum threshold (LC).
- LC percentage is determined based on the availability of input materials.
- Assembly of products is considered to have some level of local content.
- Example where 100 local content is required, no imports are allowed all materials including the production process must be local.
- If local content is less than 100 imported raw materials can be used without any Exemption.
- Key to protect local industry against imports, build industrial capacity, create jobs and contribute to the economic growth in South Africa.

**5.1.3.7 Local Procurement**

- Goods and services purchased locally irrespective of where they were made or produced.
- It is based on geographical area, may be a region/district/province.
- Local procurement is based on the location of the business.
- Imported goods are considered.
- Using local resources to stimulate growth and development.
- Simply buying from a local supplier.

**5.1.3.8 Designated products:**

The following goods will be sourced from within South Africa as part of this contract.

<b>Commodity</b>	<b>Local Content Threshold</b>
Steel Construction Material	100%
Electrical, Power and Telecom Cables	90%
Cement	100%
Transformers class 0	90%
Transformers 3B	80%

**5.1.3.9 Imported Goods and Services**

"Imported goods and services" means, but is not limited to:

Goods and services directly imported into South Africa;

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION**

Goods which although stored in South Africa are produced and/or wholly manufactured outside the borders of South Africa and/or have a minimum of 50% (fifty percent) of production costs (including labour) incurred outside of South Africa and payable to foreign residents and/or foreign registered entities;

Goods that have been "substantially transformed" outside of South Africa. Substantially transformed refers to the irreversible incorporation of imported components in the goods, with the labour costs and profit content earned by foreign residents and/or foreign registered entities exceeding 50% (fifty percent) of the Contract Amount and/or the significant assembly and manufacture of the goods occurring outside of South Africa's borders; and/or

Services with at least 50% (fifty percent) of the labour cost incurred outside of South Africa's borders and/or with at least 50% (fifty percent) of the service fee payable to foreign residents and/or foreign registered entities, regardless of whether the service involves domestic capital goods or other domestic costs

**5.1.3.10 Final Review**

Final Review means the review (to be conducted at the *completion* date of the whole of works by the *Project Manager*) of the *Contractor's* performance in respect of the *Contractor* SDL&I Obligations.

**5.1.3.11 Skills Development**

This is the requirement that *tenderers* commit to train certain individuals in specified trades.

The requirement is that the targeted numbers of individuals are trained and complete practical tasks to achieve the outcome of passing a trade test and qualifying as an artisan, or the equivalent for any other required skill.

As part of this contract, the contractor will be required to develop the following skills:

**5.1.3.12 CIDB Skills Development****Continuation of Mandatory Requirements****a) Is there CIDB compulsory training?**

If Yes, what is the % of the Construction Skills Development Goal % (CSDG)

**YES****NO**

**Minimum CSDG target  
0.0025% of the local  
content**

Skills Development

Tenderers will be required to propose against the following training initiatives:

Category	Eskom Target	Tenderer Commitment
Assembler	5	
Climber	5	
Steel erectors	5	
Health and safety officer	5	
Environmental officer	5	
Rigger	5	
Concrete reinforcer	5	

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Welding Artisans	5	
Mechanical Technologist	5	
Plumbers	5	
Civil Engineers	5	
Shutterhands	5	
Site supervisor	5	
Office administrator	5	
Electrical Engineers	5	
Structural Technologist	5	

**Note:** The skills development candidates shall be sourced from previously disadvantaged with preference given to local to site communities (ward / district municipality).

**5.1.3.13 Contractor's SDL&I Commitments**

Means those commitments regarding local content, skills development, Job creation and procurement from EMEs and QSEs made by the *Contractor* in his tender submission and used by the *Employer* for the purposes of calculating the *Contractor's* SD&L score in the tender evaluation process.

**5.1.3.14 Contractor's SDL&I Obligations**

Means those obligations of the *Contractor* regarding local content, skills development and procurement from QSEs and EMEs derived from *Contractor's* SDL&I Commitments and agreed between the *Contractor* and the *Employer*.

**5.1.3.15 Certificate of Fulfilment**

Means the certificate issued by the *Employer* after the Final Review as evidence of the *Contractor's* successful fulfilment of the *Contractor* SDL&I Obligations.

**5.1.3.16 SDL&I Progress Reports**

The *Contractor* shall submit monthly SDL&I progress reports to the *Project Manager*. SDL&I progress reports shall be submitted by the 7th (seventh) day of the month following the months to which the report relates. Each report shall include:

**5.1.3.17 An executive summary;**

Charts and detailed descriptions of the progress in narrative format, including each stage of progress of the *Contractor* SDL&I Obligations, the meeting (or delay in the meeting) of anticipated dates and targets (as set out in the program) and any documents, statistics or other form of verification of the dates and targets to be provided in respect thereof;

Percentage progress and the actual or expected dates of commencement of any of the major stages making up the *Contractor* SDL&I Obligations;

Schedule of forecast and actual, together with a 3 (three) month look-ahead of major activities and events;

Comparisons of actual and planned progress in terms of the Implementation Program;

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****5.1.3.18 Details of actual and planned resources;**

An Affidavit from the sub-*Contractors* stating the work that has been subcontracted to meet the *Contractor's* SDL&I obligations;

A schedule identifying all details of persons in the process of undergoing or who have successfully completed the Skills Transfer for the relevant period (including details of their personal information and certified copies of their test results and certificates received);

A risk register and assessment dealing with all areas of concern which may cause delays to the fulfilment of the SDL&I obligations and details of the corrective or other measures being adopted, or to be adopted to mitigate or overcome such delay; and such other matters and information (including schedules and charts) as the *Project Manager* may require to be included in the SDL&I progress report from time to time.

An electronic copy and two hard copies of each SDL&I progress report shall be submitted to the *Project Manager*.

**Additional Reports**

The *Project Manager* shall be entitled to request the *Contractor* to provide additional reports when in his opinion they are warranted to monitor the progress of the fulfilment of the *Contractor* SD&L obligations.

**5.1.3.19 The Final Review**

The parties' record that the purpose of the final review is for the *Project Manager* to determine whether the *Contractor* has fulfilled the *Contractor's* SDL&I obligations as at *completion date*.

The *Contractor* shall provide the *Project Manager* with the following documentation to be used by the *Project Manager* as a basis for the final review:

A consolidated SDL&I progress report recording all steps taken to meet the *Contractor's* SD&L obligations from the *starting date* to the *completion date* including all information and documentation referred to in clause 8.1 above;

All of the SDL&I progress reports provided by the *Contractor* during the course of the contract and any other additional report, documentation or information that the *Project Manager* deems to be reasonably relevant to the conduct of the final review (to be provided by the *Contractor* at least 21 (twenty one) business days prior to the final review). The *Project Manager* shall notify the *Contractor* of such request by way of written notice at least 30 (thirty) business days prior to the final review.

The *Employer* shall, in its reasonable discretion, conduct the final review by comparing those *Contractor's* SDL&I obligations actually fulfilled by the *Contractor* as at the time of the final review against with the *Contractor's* SDL&I obligations as a whole.

The *Project Manager* shall notify the *Contractor* of its findings on the final review by way of written notice within 30 (thirty) business days of the final review. The notice shall contain the *Project Manager's* reasons for its findings.

Should the final review reveal that the *Contractor* has not fulfilled and/or complied with any of the *Contractor's* SD&L obligations as at the *completion date*:

The *Contractor* shall be in breach of a material obligation under the contract and the *Employer* shall be entitled to have immediate recourse to and make a claim against the whole of the retention as the penalty for the *Contractor's* breach of the *Contractor* SDL&I obligations.

Should the final review reveal that the *Contractor* has fulfilled and/or complied with all of the *Contractor's* SDL&I obligations as at the *completion date*, the *Employer* shall issue a certificate of fulfilment.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****5.1.3.20 SDL&I Penalty and Performance Security**

As security for the fulfilment of all SDL&I obligations, Eskom will apply a penalty of 2.5% of every invoice amount (excluding VAT) for failure to submit SDL&I performance reports every quarter; or failure to meet the SDL&I obligations in a contract.

**5.2 Subcontracting****5.2.1 Subcontract documentation, and assessment of subcontract tenders**

The *Contractor* shall manage his sub-*Contractors* in the same way that the *Employer* manages the *Contractor*. Special attention must be given to the management of the sub-*Contractors*' SHEQ compliance.

The *Contractor* will be required to subcontract a minimum of 30% of the contract and the following designated groups will be targeted and this will be a condition of tender:

- an EME or QSE which is at least 51% owned by black people;
- an EME or QSE which is at least 51% owned by black people who are youth;
- an EME or QSE which is at least 51% owned by black people who are women;
- an EME or QSE which is at least 51% owned by black people with disabilities;
- an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships;
- a cooperative which is at least 51% owned by black people;
- an EME or QSE which is at least 51% owned by black people who are military veterans;
- an EME or QSE.

**5.2.2 Limitations on subcontracting**

Proof of a sub-contract agreement will be required as proof of meeting the 30% minimum requirement.

**5.3 Plant and Materials****5.3.1 Quality****5.3.1.1 The *Contractor* shall comply with the 240-105658000 Supplier Quality Management Specification "free issue" by the *Employer***

No Plant and material will be provided "free issue" to the *Contractor* for this Contract. All Plant and Material is to be provided by the *Contractor*

**5.3.3 *Contractor's* procurement of Plant and Materials**

All transportation to site of plant and material required for this project will be by means of road transport. The *Contractor* must familiarise himself with the road conditions to site.

The *Contractor* must prepare a fenced off storage yard on or off-site for the off-loading and safekeeping of all plant and material delivered to site. Material must be off loaded and stored separately in areas allocated for this purpose. The *Contractor* must manage such storage areas as to ensure safety compliance as well as security of the plant and material.

The *Contractor* shall comply to document "240-105658000 Supplier Quality Management Specification in works information during fabrication, supply and delivery of foundation steelwork, reinforcing, earthing devices and all other foundation related material. All copper will be supplied by the *Contractor*.

**5.3.4 Spares and consumables**

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

The *Contractor* shall supply an extra amount of 10 cable trench covers over and above the amount required per substation for the total of the *Works*.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****5.4 Tests and inspections before delivery**

All the testing as required by the relevant specifications as indicated in the document shall be done by the *Contractor*.

**5.5 Marking Plant and Materials outside the Working Areas**

The *Contractor* shall mark all Equipment, Plant and Material which is outside of the working area destined for the works.

**5.6 Contractor's Equipment (including temporary works).**

The *Contractor* shall ensure the provision of suitable construction equipment for the construction of the works.

**6. Construction****6.1 Temporary works, Site services & construction constraints****6.1.1 Employer's Site entry and security control, permits, and Site regulations**

Security control and entry will be done in accordance to the security scope of work for Erica Substation. The *Contractor* will ensure that the *Contractor's* staff complement undergoes screening by SAPS to access Erica Substation.

The *Contractor* will have to adhere to Eskom's High Voltage regulations. *Contractor's* personnel will be expected to have completed the necessary High Voltage Regulations (ORHVS) modules in order to be issued with a permit to work in the 400kV yard and GIS Building.

**6.1.2 Restrictions to access on Site, roads, walkways and barricades**

Where the restrictions are applicable, the *Contractor* shall be required to comply with these. The *Contractor* will ensure the following are adhered to for access to site:

- Security/police clearances not more than a year old are submitted to the *Employer*
- Certified ID/ Passport copies and work permit for foreign employees are submitted to the *Employer*
- Tool/equipment list with serial numbers if available are submitted to the *Employer*
- People with criminal records depending on the seriousness of the charges will not be accepted at Eskom sites.

**6.1.2.1. Positive identification at all times:**

- Eskom Employee only by means of Eskom Id Card, No Eskom ID card employee will be treated as a visitor.
- Visitor and *Contractors* access by means of SA ID, passport, drivers licence
- Recording of visitors details electronically or manually.

**6.1.2.2. Visitor confirming process.**

- Visitors must be accompanied by a host at all times.
- Declaration, recording and movement control of equipment and material.
- Screening of persons and articles/parcels through the use of electronic equipment ensuring prohibited items are not brought on site.
- Alcohol testing to be conducted at Eskom sites.
- Safety inductions to be conducted at Eskom sites.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****6.1.3 People restrictions on Site; hours of work, conduct and records**

The *Contractor* must clearly indicate its proposed working hours in the Tender and specifically in the programme provided with the Tender. After award the *Contractor* will adhere to these agreed working hours and keep detailed and accurate records of compliance herewith. The *Contractor* ensures that the *Supervisor* must sign these records daily and the *Project Manager* and *Supervisor* must have access to these records at any time.

The *Contractor* indicates any shift work or extended working hours required in order to meet with the required completion dates of the Package Order. The *Project Manager* and SHEQ manager's permission to work these hours are obtained prior to working such hours. Permission will only be granted if the longer hours worked have been accepted in writing by the Department of Labour.

The *Contractor* keeps records of his people on Site, including those of his Sub-*Contractors* which the *Project Manager* or *Supervisor* have access to at any time. These records will be needed when assessing compensation events.

**6.1.4 Health and safety facilities on Site**

Refer to the SHE specification, EMP, South African Government Guidelines and Directions on Management of COVID-19 and other epidemic outbreaks, World Health Organisation Guidelines, the latest Disaster Management Act and applicable government regulations. The *Contractor* shall appoint the security for the site camp and plant and material.

**6.1.5 Environmental controls, fauna & flora, dealing with objects of historical interest**

The *Contractor* shall comply with the environmental criteria and constraints stated in Annexures as per the Environmental Authorisation and other Permits, WUL Report with Water use license conditions, EIA Report, EMP, Aquatic Biodiversity Assessment Report, environmental legislation, regulations, guidelines, procedures and all other statutory requirements for the Erica Substation project

**6.1.6 Title to materials from demolition and excavation**

The *Contractor* shall make his own arrangements, to the approval of the *Supervisor* and the Local Authorities, for the disposal of all surplus material and construction waste resulting from the works. Disposal of all waste (Building, Hazardous and Domestic) must be in accordance with the EMP. Steel, copper and all other high value materials will be disposed of by the *Employer*.

**6.1.7 Cooperating with and obtaining acceptance of Others**

The *Contractor* will be required to integrate with Eskom personnel during construction. It is expected that cooperation will be given when this happens during the project construction.

**6.1.8 Publicity and progress photographs**

As agreed with the *Employer's Project Manager*.

**6.1.9 Contractor's Equipment**

Records are to be kept of Equipment on Site including whether it is owned or hired. This includes any scaffolding, rigs, heavy lifts and cranes.

The *Contractor* shall inform the *Project Manager* prior to the removal of any equipment during the contract period from the Working Areas.

**6.1.10 Equipment provided by the Employer**

No equipment shall be provided by the *Employer*.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****6.1.11 Site services and facilities**

The *Contractor* shall conduct site inspection and establish what facilities (i.e. power supply, water, waste disposal, tele-coms, ablutions, fire protection and lighting) are required or necessary for providing the Works

The *Contractor* shall provide everything else necessary for providing the Works. Any measures which the *Contractor* may require to maintain continuity and quality of supply shall be arranged by him at his own expense.

**6.1.12 Facilities provided by the Contractor**

*Contractor* shall provide all facilities necessary for providing the Works

The *Contractor* is to provide the following items to facilitate the *Employer's* site *Supervisors* and project administration team within four weeks of contract award:

*Facilities for Employer*

- a) Establishment of *Employer* facilities on site i.e. Site office, sheds, toilets including plumbing, electricity, air conditioning, internet connections, copying and printing facilities etc.
- b) Portable water and toilet facilities for sole use of Clients Representatives.

*Facilities for the Contractor*

- c) Establishment of facilities on site ie. Site office, sheds, toilets including plumbing and electricity, including internet connections, copying and printing facilities etc.
- d) Staff accommodation
- e) Access to site & permits
- f) Establishment of equipment, tools and plant
- g) Allow the sum for hiring of standby generator including transport to site, working on site, diesel fuel and removing from site at contract completion. (ON EMPLOYER'S INSTRUCTION)
- h) Name boards
- i) Dealing with water during construction
- j) Removal of the site Establishment

The *Contractor* shall negotiate with landowners for the erection of any construction camp(s) and accommodation for his personnel, and ensuring compliance with all by-laws and requirements of the relevant authorities **after contract award**. All necessary services - water, electricity, sewerage, toilet facilities, telephones, etc. are to be provided by the *Contractor* to suit his needs.

All evidence of construction camp(s), batching plants, etc. are to be removed upon completion, and such areas rehabilitated to the satisfaction of the landowner and the *Supervisor*.

The *Contractor* shall provide sanitary amenities, first aid and firefighting facilities as required by the Occupational Health and Safety Act.

The *Contractor* keeps records of the following and submits copies of these records to the *Supervisor* weekly:

- Number of personnel by category and/or trade on site on a daily basis.
- Detailed list of equipment by category on site on a daily basis with an indication of its working condition i.e. working order, under repair, working but standing idle etc.
- A site diary is to be kept by the *Contractor* in which all events are recorded. Records of events that could give rise to Compensation Events are to be kept up to date for inspection by the *Supervisor* and/or *Project Manager* at all times.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****6.1.13 Existing premises, inspection of adjoining properties and checking work of Others**

Refer to Construction Environmental Management Plan and Site Information.

**6.1.14 Survey control and setting out of the works**

Set out points/beacons will be identified by the *Supervisor*. All Top of Concrete (TOC) and specified levels will be provided to the *Supervisor* by a Professional Land Surveyor. The *Supervisor* may request at various intervals for the *Contractor* to verify certain of the works. These costs will be to the *Contractor* and should be included in the rates.

**6.1.15 Excavations and associated water control**

Refer to the SHE specification, EMP, Geotechnical Report and any other statutory requirements.

**6.1.16 Underground services, other existing services, cable and pipe trenches and covers**

Should there be any underground services that may require relocating; this should be discussed with the *Supervisor* who will discuss it with the *Project Manager* and the designers.

**6.1.17 Control of noise, dust, water and waste**

Refer to the SHE specification, EMP, Geotechnical Report and any other statutory requirements.

**6.1.18 Sequences of construction or installation**

As per approved Project Schedule reflecting the key milestone dates.

**6.1.19 Giving notice of work to be covered up**

After construction the *Contractor* is to rehabilitate any damage caused to the environment to the satisfaction of the *Supervisor*. The remedial works are to be "signed-off" by both parties before acceptance. The contractor to take note of the QITP's requirements relating to earthing, earth crimpets and clamps, which needs to be inspected prior to closing of trenches.

**6.1.20 Hook ups to existing works**

No existing works

**6.2 Completion, testing, commissioning and correction of Defects****6.2.1 Work to be done by the Completion Date**

On or before the Completion Date the *Contractor* shall have done everything required to Provide the Works except for the work listed below which may be done after the Completion Date but in any case before the dates stated. The *Project Manager* cannot certify Completion until all the work except that listed below has been done and is also free of Defects which would have, in his opinion, prevented the *Employer* from using the *works* and Others from doing their work.

	Item of work	To be completed by
	As built drawings	Within 10 days after Completion

**6.2.2. Use of the works before Completion has been certified**

Works will be taken over upon commissioning.

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****6.2.3 Materials facilities and samples for tests and inspections**

The *Contractor* shall be responsible for the strength and quality of all materials used and workmanship employed. The *Contractor* shall be responsible for the stability of the permanent works and the temporary works. The fact that the *Employer* has not objected during the construction period to any materials and/or workmanship employed by the *Contractor* and even though such materials and/or workmanship has been inspected by the *Supervisor* shall not relieve the *Contractor* of such responsibility.

**6.2.4 Commissioning**

The assets shall be commissioned to Eskom's standards and specifications. This is intended to protect the safety, integrity, and security of the Transmission system.

The pre-commissioning and commissioning activities shall be the responsibility of the *Contractor*, and shall be witnessed and the results verified, accepted and approved by the Eskom Transmission Western Grid representative(s). The *Contractor* shall utilise the Eskom approved pre-commissioning and commissioning procedures and shall compile the required documentation for scrutiny, acceptance and handover purposes prior to energisation.

The *Contractor* shall submit to Eskom, the pre-commissioning and commissioning test plans and program, which shall comply with the Eskom requirements, for approval.

Eskom Transmission has test routines for most of the protection IEDs and these shall be obtained from Eskom and shall be used by the *Contractor* during commissioning, where applicable. Test routines that are not available for IEDs within the schemes that will be designed by the appointed *Contractor* shall be developed by the *Contractor*.

The following standard shall be used:

- 240-54615413 – Standard for Commissioning Protection Assets.
- 240-55197966 – Standard for the commissioning of metering installations (HV and MV).
- 240-137465740 – Standby Battery storage and commissioning in Eskom

**Commissioning options**

The OEM shall make provision for the two commissioning options:

**Option 1**

- The commissioning of Erica Substation shall be commissioned by the OEM and Eskom (Western Grid Secondary Plant and PTM) commissioning teams shall oversee and witness the commissioning.
- The OEM shall submit a detailed training program and provide training that will include the installation, maintenance, operation of all the equipment.
- The commissioning training shall be provided by the OEM during the commissioning of the Erica Substation.
- Commissioning at the remote ends will be executed by Eskom (PTM and Western Grid secondary plant, CoCT?) teams as integrated with the Erica Substation GIS commissioning.

**Option 2**

- The commissioning of Erica Substation shall be commissioned by the Eskom (Western grid secondary plant and PTM and CoCT?) commissioning teams. The OEM shall oversee and witness the commissioning.
- The OEM shall submit a detailed training program and provided training that will include the installation, maintenance, operation of all the equipment.
- Commissioning at the remote ends will be executed by Eskom (PTM and Western Grid secondary plant and CoCT?) teams as integrated with the Erica Substation GIS commissioning.

After the evaluation of the tender, Eskom will advise which option will be selected for the commissioning the new GIS.

The final switching of the equipment and lines shall be carried out under the permission of the National Control (Approved commissioning plan and outages).

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****Commissioning sequence**

The commissioning of the protection assets including the telecontrol, teleprotection, measurements, auxiliary supplies etc shall be done by the Tenderer. The Eskom commissioning team(s) shall oversee and witness the commissioning.

All the outages pertaining to the final commissioning shall be arranged via the Grid to the National Control.

- The tenderer needs to provide a commissioning sequence. The commissioning sequence must be discussed with the Grid.

- The tenderer shall ensure the final switching procedure is drawn up with Grid and National Control

The commissioning sequence may change based on the network constraints and requirements from the national control.

**6.2.5 Start-up procedures required to put the works into operation**

As per specifications

**6.2.6 Take over procedures**

Take-over of The Works will be in accordance NEC procedures in conjunction with Eskom Tx procedure TST 41 – 638 / TST 41 - 141. The *Contractor* advises the *Supervisor* when the *Works* is available for final inspection and provides assistance.

**6.2.7 Access given by the *Employer* for correction of Defects**

Clause 43.4 of the NEC will apply as well as normal ORHVS procedures for getting permits.

**6.2.8 Performance tests after Completion**

The *Contractor* shall do testing in accordance to the GIS specification 240-50807380 section 7 for the GIS and section 15 & 15.1 of the PTM&C scope of work document number 240-171000109 for protection equipment.

**6.2.9 Training and technology transfer**

The supplier shall provide training of an international standard on the supplied equipment by OEM accredited instructors. The training shall be in accordance with the Eskom training standard 240-56065202, and organised on the following levels:

- Orientation and basic functioning
- Operational and first line maintenance
- Installation, testing and commissioning of the GIS and circuits (controls)
- Specialized maintenance on all aspects of the GIS which must include major intrusive work, repair and testing

**6.2.10 Operational maintenance after Completion**

The Supplier shall provide a Reliability Availability Maintainability Programme Manual within 2 months after *Notification of Acceptance*

**6.2.11 Reliability**

The reliability programme shall include:

- An evaluation of the GIS equipment throughout the design, the production and the test procedures used;
- An estimate of the failure rates expected for the various system devices during their useful life based on component history of factory failure rates, in service failure rates and references.

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- Document Classification: Controlled Disclosure SPECIFICATION FOR GAS INSULATED SWITCHGEAR (GIS) AND ASSOCIATED AUXILIARY EQUIPMENT Unique Identifier: 240-50807380 Revision: 6 Page: 54 of 82
- **ESKOM COPYRIGHT PROTECTED** When downloaded from the WEB, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the WEB.
- An assurance that the material and the components selected for this application enable the GIS installation to perform in compliance with the specified requirements;
- De-rating and safety factors used in the design of each item to enhance the reliability of the entire system; and
- Test data that support the performance capability as well as the quality of parts and materials supplied.

**6.2.12 Availability**

The GIS installation shall be designed to meet the following guaranteed values of availability:

- Scheduled outages, which involves planned inspection and maintenance, not be more than once per year; and
- Forced outage also not to be more than once per year.
- The overall GIS availability to be 99,8 % per year per feeder bay. This availability to be calculated on a yearly basis.

The maximum outage time to be limited to 8 hours with the understanding that only one feeder bay to be switched out at a time for scheduled maintenance activities. The outage time allowed for scheduled maintenance might only be during weekends.

**6.2.13 Maintainability**

The GIS installation shall be designed to meet the following maintainability requirements:

- The *Contractor* shall design the equipment to minimise both repair and maintenance effort and the need for special skills and tools;
- The *Contractor* shall include as a minimum the following factors in the maintainability design plan:
  - analysis and allocation of scheduled maintenance effort required to keep the equipment in proper working order;
  - for each repair or maintenance work, quantitative estimates shall be made of repair frequency, duration, man-hour's and parts requirements;
  - spare parts provision and logistic support;
  - personnel safety requirements;
- Recommendation on the quantities of spare parts or units required. Technical information concerning spare parts shall include reasons for selection, information on storage and supply of parts for the repair and maintenance of equipment during the nominal operating life; and
- Provide installation, operation, repair and maintenance manuals in compliance with the *Employer's* requirements. The manuals shall include details of special skills, training, or tools needed for maintenance operations.

**7. List of drawings****7.1 Drawings issued by the *Employer***

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some drawings may contain both Works Information and Site Information.

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Drawing number	Revision	Title
WMit12P01-SE-D6	1	Erica Station Electric Diagram
WMit12P01-SE-D7	0	Erica Key Plan
Mit12P01-SE-D16-1	0	Erica Transformer Electrical Bay Layout
Mit12P01-SE-D16-2	0	Erica Transformer Electrical Bay Layout
Mit12P01-SE-D16-3	0	Erica 132kV Feeder Electrical Bay Layout
Mit12P01-SE-D16-4	0	Erica 400kV Feeder Electrical Bay Layout

**C3.2 CONTRACTOR'S WORKS INFORMATION**

This section of the Works Information will always be contract specific depending on the nature of the *works*. It is most likely to be required for design and construct contracts where the tendering *Contractor* will have proposed specifications and schedules for items of Plant and Materials and workmanship, which once accepted by the *Employer* prior to award of contract now become obligations of the *Contractor* per core clause 20.1.

Typical subheadings could be

- a) *Contractor's* design
- b) Plant and Materials specifications and schedules
- c) Other

This section could also be compiled as a separate file.

**Annexure A****1. Key personnel**

The *Contractor* must have the following key personnel in its permanent employment or alternatively, a signed undertaking from a specialist company having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a sub-*Contractor* agreement, will be acceptable.

The *curriculum vitae* of all key personnel (including sub-consultants), must be submitted

Key personnel will be expected to operate out of the local office, as the exigencies of this project require.

Item No	Evaluation Area	Quantity	Evaluation Criteria
1	NRS 040 Responsible Person. (Name, Certificate, CV and contactable references) Refer to Schedule 23	1	Valid NRS 040-3 certificate

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****2. Cable Terminations**

- a. All cable terminations shall be of approved design and an approved jointing technique shall be adopted. The terminations shall be designed to restrict the voltage gradients both inside and outside the terminations to safe values and shall be complete with suitable supporting and lifting arrangements.
- b. The terminations shall be designed to permit easy cleaning and to withstand all atmospheric conditions due to weather, ozone, acids, alkalis, dust, sandstorms or rapid changes of temperature under the working conditions existing on site. The design shall be such that stresses due to expansion and contraction in each part of the insulator and fittings shall not lead to the development of defects.
- c. Where the cables are to be terminated in gas insulated switchgear or oil-filled transformer cable boxes the *Contractor* shall be responsible for the design, testing and supply of the insulating interface barrier which provides the seal between SF<sub>6</sub> or oil and air as well as between SF<sub>6</sub> or oil and the cable insulation. This barrier shall be designed to suit the sealing end termination chamber provided by the switchgear or transformer manufacturer and shall be in line with the requirements of IEC 62271-209. The *Contractor* shall be required to liaise with the switchgear or transformer manufacturer to ensure that the cable boxes, corona shields and relevant accessories are suitably designed to accommodate the cable sealing ends.
- d. Where specified, the terminations shall be the plug-in type. The termination shall be type tested with the cable system offered. The *Contractor* shall supply and install the female bushing where specified. Where specified extension connection pieces shall be supplied to increase the effective length of the pug-in type termination to match the longer conventional termination length.
- e. Each termination shall be supplied with an adequate quantity of jointing material and shall be complete with all necessary fittings including tapered or stepped wiping gland, filling hole, air vent holes and an expansion dome, where applicable.
- f. The *Contractor* shall be responsible for ensuring that a proper oil or gas seal is provided and that the barrier for use in oil or SF<sub>6</sub> immersed applications shall be of material which shall not degrade under the influence of oil or SF<sub>6</sub> and shall be suitable for the direct or differential pressure applied under working and maintenance conditions.
- g. Corona shields and arcing rings or horns shall be provided at the top of each open type termination and a horn or ring at the base. The base itself shall be insulated from supporting steelwork by pedestal type porcelain insulators. Corona shields shall also be supplied with the transformer terminations.
- h. Outdoor sealing ends shall be of the composite polymeric type and mounted on approved galvanised steel support structures. Clearance to ground and other equipment will be according to NRS 060.
- i. All terminations shall incorporate sheath gland insulators or insulated glands. The insulation provided shall be capable of withstanding the specified routine dc test voltage to be applied on site to the anti-corrosion covering.
- j. An earth terminal of adequate dimensions shall be provided to facilitate the earthing arrangement required.

**3. Wayleaves, Permissions and Permits**

- a. The *Contractor* shall be responsible for obtaining all of the necessary wayleaves, permissions or permits applicable to working near any existing services or other infrastructure on Site, and shall ensure that any wayleaves, permissions or permits obtained by the *Employer's* Agent prior to the award of the contract are transferred into the *Contractor's* name.
- b. The *Contractor* shall abide by any conditions imposed by such wayleaves, permissions or permits.
- c. The *Contractor* shall ensure that all wayleaves, permissions and permits are kept on site and are available for inspection by the relevant service authorities on demand.
- d. The *Contractor* shall also ensure that any wayleaves in respect of electricity services are renewed timeously every three months.
- e. The *Contractor* shall appoint a Construction *Supervisor* who shall be a competent person in terms of the OHS Act and shall have at least 5 years relevant construction experience. A

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION**

permit will be issued to the Responsible Person. The Responsible Person shall have completed the Operational Regulations for HV Systems Course in accordance with NRS 040. All work shall be undertaken under the direct supervision of the Competent Person and the permit conditions.

- f. Provided that the *Contractor* has submitted an acceptable Responsible Person and an acceptable health and safety plan, the site will be handed over to the *Contractor*. Thereafter, the *Contractor* will be entirely responsible for the safety of his staff and any other person on the site, and the public in the area in close proximity to the site.
- g. Should the Responsible Person leave the Site, all work will cease, and all *Contractor's* Staff will be removed from the Site unless a suitable replacement Responsible Person is provided by the *Contractor*.

## PART 4: SITE INFORMATION

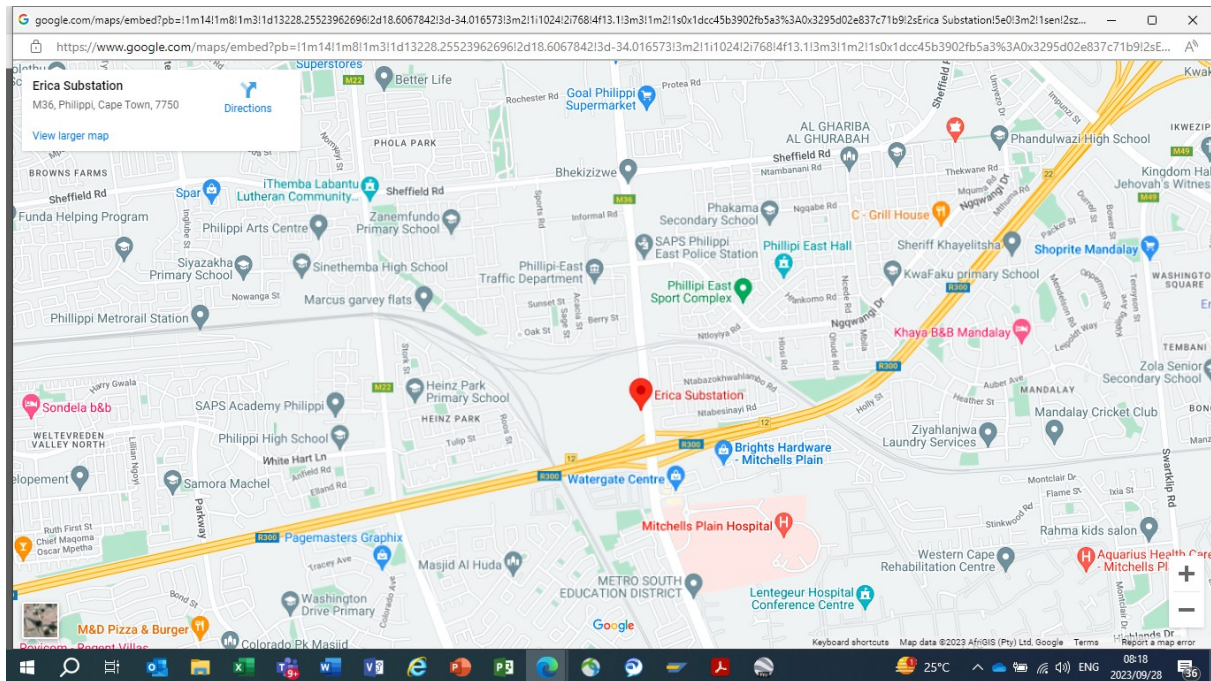
Document reference	Title	No of pages
C4	This cover page	1
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## PART 4: SITE INFORMATION

### General description

Erica Substation project works will be within the boundaries of Philippi located next to Stock Road, close to the R300 offramp.

The coordinates of the substation are: -34.01643, 18.60674



### Existing buildings, structures, and plant & machinery on the Site

None. It is only a fenced site.

### Subsoil information

For information regarding the subsoil, please see "ERICA SUBSTATION DETAILED GEOTECHNICAL REPORT"

### Hidden services

Scans for service detection (electric cables, drainage / sewer, water lines etc) needs to be done prior to excavations and trenching to identify any possible services underground. Any hidden services that may be encountered on site will also need to be relocated. Once these are indicated to the *Contractor* via the scans they shall be deemed "known". Any costs incurred for repairs to any "known" services shall be for the Contractor's account.

### Other reports and publicly available information

**ENGINEERING, PROCUREMENT AND CONSTRUCTION OF THE ERICA 2X500MVA 400/132KV GAS INSULATED SWITCHGEAR (GIS) SUBSTATION FOR ERICA SUBSTATION****5.1 Socio Economic Circumstances**

Erica Substation is situated in a crime and drug riddled area. The army was recently deployed to help with crime and drugs in the area. Philippi faces many social problems, including lack of education, violent crime, substance abuse, environmental degradation and a rise in the number of residents with HIV/AIDS. Schools in Philippi are often overcrowded, with low pass rates and are under-resourced with few extracurricular activities available to students. The average household income is R3, 200 or less, indicating that many residents holds low income jobs or lives on social grants. Successful graduates often move away from the township, leaving learners with few role models and little motivation to challenge local job seeking behaviours or believe that they can make something of themselves. Lack of information, networks and opportunities trap many into continued poverty and under-productivity.