



## NEC3 Professional Services Contract (PSC3)

**Contract between Eskom Holdings SOC Ltd  
(Reg No. 2002/015527/30)**

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

**for Provision for Panel A of contractors for the Owners  
Engineer Services to Eskom Transmission Division**

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<b>Contents:</b>	<b>No of pages</b>
<b>Part C1 Agreements &amp; Contract Data</b>	<b>[•]</b>
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<b>Part C3 Scope of Work: The Scope</b>	<b>[•]</b>

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

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**PART C1: AGREEMENTS & CONTRACT DATA**

Document reference	Title	No of pages
C1.1	Form of Offer & Acceptance [to be inserted from Returnable Documents at award stage]	[•]
C1.2a	Contract Data provided by the <i>Employer</i>	[•]
C1.2b	Contract Data provided by the <i>Consultant</i> [to be inserted from Returnable Documents at award stage]	[•]
C1.3	Securities proforma	[•]

## 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:

#### Provision for Panel A of contractors for the Owners Engineer Services to Eskom Transmission Division

The tenderer, identified in the Offer signature block, has

<i>either</i>	examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.
<i>or</i>	examined the draft contract as listed in the Acceptance section and agreed to provide this Offer.

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 *Consultant* 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.

The offered total of the Prices exclusive of VAT is	<b>R</b>
Value Added Tax @ 15% is	<b>R</b>
The offered total of the Prices inclusive of VAT is	<b>R</b>
(in words)	

If Option E or G apply, for each offered total insert in brackets, "(Not Applicable – Cost reimbursable)"

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 *Consultant* 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

**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 Consultant 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:

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 and signed original copy of this document, including the Schedule of Deviations (if any).

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.

**PROVISION FOR PANEL A OF CONTRACTORS FOR THE OWNERS ENGINEER SERVICES TO ESKOM TRANSMISSION DIVISION****Schedule of Deviations**

Note:

1. To be completed by the Employer prior to award of contract. 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 PSC3 Contract Data

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

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

Clause	Statement	Data
1	<b>General</b>	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
		<b>G: Term contract</b>
	dispute resolution Option	<b>W1: Dispute resolution procedure</b>
	and secondary Options	
		<b>X1: Price adjustment for inflation</b>
		<b>X2 Changes in the law</b>
		<b>X7: Delay damages</b>
		<b>X9: Transfer of rights</b>
		<b>X10 <i>Employer's Agent</i></b>
		<b>X11: Termination by the <i>Employer</i></b>
		<b>X18: Limitation of liability</b>
		<b>Z: <i>Additional conditions of contract</i></b>
	of the NEC3 Professional Services Contract (April 2013) <sup>1</sup>	
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>
	Tel No.	<b>[•]</b>
	Fax No.	<b>[•]</b>
11.2(9)	The <i>services</i> are	<b>Provision of Owners Engineer Services to Transmission Division</b>

<sup>1</sup> Available from Engineering Contract Strategies Tel 011 803 3008 Fax 011 803 3009 and [www.ecs.co.za](http://www.ecs.co.za)

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11.2(10) The following matters will be included in the Risk Register

- Unavailability of historical data of site
- Community unrest in certain areas
- Integration of the latest technology
- Working near live electrical apparatuses
- Travelling to remote areas

11.2(11)	The Scope is in	Part 3: Scope of Services	
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa	
13.1	The <i>language of this contract</i> is	English	
13.3	The <i>period for reply</i> is	Two (2) weeks	
13.6	The <i>period for retention</i> is	As per task order duration	
2	The Parties' main responsibilities		
25.2	The <i>Employer</i> provides access to the following persons, places and things	access to	access date
		1	As per task order
			As per task order
3	Time		
31.2	The <i>starting date</i> is.	When both parties have signed this contract	
11.2(3)	The <i>completion date</i> for the whole of the services is.	Eighty four (84) months after the <i>starting date</i>	
11.2(6)	The <i>key dates</i> and the <i>conditions</i> to be met are:	Condition to be met	key date
		1	As per task order scope
			As per task order scope
31.1	The <i>Consultant</i> is to submit a first programme for acceptance within	as per the task order	
32.2	The <i>Consultant</i> submits revised programmes at intervals no longer than	as per the task order	
4	Quality		
40.2	The quality policy statement and quality plan are provided within	as per the task order	
42.2	The <i>defects date</i> is	as per the task order	
5	Payment		
50.1	The <i>assessment interval</i> is	between the 25th day of each successive month.	
50.3	The <i>expenses</i> stated by the <i>Employer</i> are	Item	Amount
		as per the task order	as per the task order invoice

51.1	The period within which payments are made is	30 days after receipt of valid tax invoice.
51.2	The <i>currency of this contract</i> is the	South African Rand
51.5	The <i>interest rate</i> is	<p>the publicly quoted prime rate of interest charged by Standard Bank of South Africa Limited at the time an amount payable in SA Rand was due,</p> <p>and</p> <p>the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted <i>mutatis mutandis</i> every 6 months thereafter and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove</p>
6	Compensation events	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.
7	Rights to material	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.
8	Indemnity, insurance and liability	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.
82.1	The <i>Consultant's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than the excluded matters, is limited to that proportion of the Employer's losses for which the Consultant is responsible under this contract.	As per the Task Order
9	Termination	There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.



<b>10</b>	<b>Data for main Option clause</b>	
<b>G</b>	<b>Term contract</b>	
21.4	The <i>Consultant</i> prepares forecasts of the total Time Charge and <i>expenses</i> at intervals no longer than	<b>Four (4) weeks</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	The <i>Adjudicator</i> is	the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a> ). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).
W1.2(3)	The <i>adjudicator nominating body</i> is:	the Chairman of the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering. (See <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a> ).
W1.4(2)	The <i>tribunal</i> is:	<b>Arbitration</b>
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	<b>Johannesburg South Africa</b>
	The person or organisation who will choose an arbitrator	
	<ul style="list-style-type: none"> <li>if the Parties cannot agree a choice or</li> <li>if the <i>arbitration procedure</i> does not state who selects an arbitrator, is</li> </ul>	the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.
<b>12</b>	<b>Data for secondary Option clauses</b>	
<b>X1</b>	<b>Price adjustment for inflation</b>	
X1.1	The index is	<b>SEIFSA Consumer Price Index Table D2</b>
	The staff rates are	Fixed for the first Twelve (12) months, thereafter, subjected to the CPI, for a specific Task Order with a duration greater than Twelve (12) months. The base date for CPA calculation will be as at the date of Request for Quotation.
<b>X2</b>	<b>Changes in the law</b>	
X2.1	The law of the project is	<b>the Law of the Republic of South Africa</b>
<b>X7</b>	<b>Delay damages</b>	
X7.1	Delay damages for late Completion of the whole of the <i>services</i> are	<b>as per the Task Order</b>

<b>X9</b>	<b>Transfer of rights</b>	There is no reference to Contract Data in this Option and terms in italics used in this Option are identified elsewhere in this Contract Data.
<b>X10</b>	<b>The <i>Employer's Agent</i></b>	
X10.1	The <i>Employer's Agent</i> is	
	Name:	<b>Makgwanya Maringa</b>
	Address	<b>Eskom, Megawatt Park</b>
	The authority of the <i>Employer's Agent</i> is	<b>To carry out all obligations of the contract on behalf of the <i>Employer</i>.</b>
		<b>For each Task Order, an <i>Employers Agent</i> will be appointed.</b>
<b>X11</b>	<b>Termination by the <i>Employer</i></b>	There is no reference to Contract Data in this Option and terms in italics used in this Option are identified elsewhere in this Contract Data.
<b>X18</b>	<b>Limitation of liability</b>	
X18.1	The <i>Consultant's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	<b>R0.00 (Zero Rand)</b>
X18.2	The <i>Consultant's</i> liability to the <i>Employer</i> for Defects that are not found until after the <i>defects date</i> is limited to:	<b>The total of the Prices</b>
X18.3	The <i>end of liability date</i> is	<b>five years after completion of the whole of the services/task order.</b>
<b>Z</b>	<b>The <i>Additional conditions of contract</i> are</b>	<b>Z1 to Z14 always apply.</b>

**Z1 Cession delegation and assignment**

- Z1.1 The *Consultant* 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 *Consultant* 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 *Consultant* 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 *Employer* within two weeks of the Contract Date of the key person who has the authority to bind the *Consultant* on their behalf.
- Z2.3 The *Consultant* 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 *Consultant* in writing.

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

- Z3.1 Where a change in the *Consultant's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Consultant's* B-BBEE status, the *Consultant* notifies the *Employer* within seven days of the change.
- Z3.2 The *Consultant* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Employer* within thirty days of the notification or as otherwise instructed by the *Employer*.
- Z3.3 Where, as a result, the *Consultant's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Consultant's* obligation to Provide the Services.
- Z3.4 Failure by the *Consultant* 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 those stated in core clause 91. The payment on termination includes a deduction of the forecast of the additional cost to the *Employer* of completing the whole of the *services* in addition to the amounts due in terms of core clause 92.1.

**Z4 Confidentiality**

- Z4.1 The *Consultant* 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 *Consultant*, enters the public domain or to information which was already in the possession of the *Consultant* at the time of disclosure (evidenced by written records in existence at that time). Should the *Consultant* disclose information to Others in terms of clause 23.1, the *Consultant* ensures that the provisions of this clause are complied with by the recipient.
- Z4.2 If the *Consultant* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Employer*.
- Z4.3 In the event that the *Consultant* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Consultant*, 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 *Consultant* 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 *Employer's* project works or any portion thereof, in the course of Providing the Services and after Completion, requires the prior written consent of the *Employer*. All rights in and to all such images vests exclusively in the *Employer*.

**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, 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 Provision of a Tax Invoice. Add to core clause 51**

- Z6.1 The *Consultant* (if registered in South Africa in terms of the companies Act) is required to comply

**PROVISION FOR PANEL A OF CONTRACTORS FOR THE OWNERS ENGINEER SERVICES TO ESKOM TRANSMISSION DIVISION**

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.

**Z7 Notifying compensation events**

- Z7.1 Delete from the last sentence in core clause 61.3, "unless the *Employer* should have notified the event to the *Consultant* but did not".

**Z8 *Employer's* limitation of liability**

- Z8.1 The *Employer's* liability to the *Consultant* for the *Consultant's* indirect or consequential loss is limited to R0.00 (zero Rand)

**Z9 Termination: Add to core clause 90.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":**

- Z9.1 or had a business rescue order granted against it.

**Z10 Delay damages: Addition to secondary Option X7 Delay damages (if applicable in this contract)**

- Z10.1 If the *Consultant'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 *Consultant's* obligation to Provide the Services.
- Z10.2 If the *Employer* terminates in terms of this clause, the procedures on termination are those stated in core clause 91. The payment on termination includes a deduction of the forecast of the additional cost to the *Employer* of completing the whole of the *services* in addition to the amounts due in terms of core clause 92.1.

**Z11 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>Consultant</i> or a third party, such party's employees, agents, or Subconsultants or Subconsultant's employees, or any one or more of all of these parties' relatives or friends,
<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>Consultant</i> , or any member thereof in the case of a joint venture, or its employees, agents, or Subconsultants or the Subconsultant'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,

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

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

- Z11.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.
- Z11.2 The *Employer* may terminate the *Consultant's* obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Consultant* 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 *Consultant's* obligation to Provide the Services for this reason.
- Z11.3 If the *Employer* terminates the *Consultant'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.
- Z11.4 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 *Consultant* ensures that the Committing Party co-operates fully with an investigation.

**Z12 Insurance**

Z12.1 Replace core clause 81 with the following:

- 81.1 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.
- 81.2 The *Consultant* provides the insurances stated in the Insurance Table A 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	For the period following Completion of the whole of the services or earlier termination
Liability of the <i>Consultant</i> for claims made against him arising out of his failure to use the skill and care normally used by professionals providing services similar to the <i>services</i>	As per task order	As per task order
Liability for death of or bodily injury to a person (not an employee of the <i>Consultant</i> ) or loss of or damage to property resulting from an action or failure to take action by the <i>Consultant</i>	<p><b><u>Loss of or damage to property:</u></b></p> <p>The replacement cost where not covered by the <i>Employer's</i> insurance</p> <p>The <i>Employer's</i> policy deductible, as at Contract Date, where covered by the <i>Employer's</i> insurance</p>	As per task order

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	<b><u>Bodily injury to or death of a person:</u></b> The amount required by the applicable law.	
Liability for death of or bodily injury to employees of the <i>Consultant</i> arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law	As per task order

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

**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

**Z13 Nuclear Liability**

- Z13.1 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.
- Z13.2 The *Employer* is solely responsible for and indemnifies the *Consultant* or any other person against any and all liabilities which the *Consultant* 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 *Consultant* or any other person or the presence of the *Consultant* or that person or any property of the *Consultant* 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*.
- Z13.3 Subject to clause Z13.4 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 *Consultant* or any other person, or the presence of the *Consultant* or that person or any property of the *Consultant* 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*.
- Z13.4 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.

- Z13.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

## **Z14 Asbestos**

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

<b>AAIA</b>	means approved asbestos inspection authority.
<b>ACM</b>	means asbestos containing materials.
<b>AL</b>	means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL.
<b>Ambient Air</b>	means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.
<b>Compliance Monitoring</b>	means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.
<b>OEL</b>	means occupational exposure limit.
<b>Parallel Measurements</b>	means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.
<b>Safe Levels</b>	means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.
<b>Standard</b>	means the <i>Employer's Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles</i> .
<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 baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

- Z14.1 The *Employer* ensures that the Ambient Air in the area where the *Consultant* 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.

- Z14.2 Upon written request by the *Consultant*, 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 *Consultant* may perform Parallel Measurements and related control measures at the *Consultant's* expense. For the purposes of compliance

**PROVISION FOR PANEL A OF CONTRACTORS FOR THE OWNERS ENGINEER SERVICES TO ESKOM TRANSMISSION DIVISION**

the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z14.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

- Z14.3 The *Employer* manages asbestos and ACM according to the Standard.
- Z14.4 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.
- Z14.5 The *Consultant'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.
- Z14.6 The *Consultant* 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.
- Z14.7 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.



## C1.2 Contract Data

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

1. The tendering consultant is advised to read both the NEC3 Professional Services Contract, April 2013 and the relevant parts of its Guidance Notes (PSC3-GN)<sup>1</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 158 & 159 of the PSC3 April 2013 Guidance Notes.
2. The number of the clause in the PSC3 which requires the data is shown in the left hand column for each statement however other clauses may also use the same data.
3. Whenever a cell is shaded in the left hand column it denotes this data is optional in PSC3 and would be required in relation to the option selected. The *Employer* should already have made the selection and deleted the rows not required.

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

Clause	Statement	Data	
10.1	The <i>Consultant</i> is (Name): Address Tel No. Fax No.		
22.1	The <i>key people</i> are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: Experience:		
Only if required		CV's (and further <i>key persons</i> data including CVs) are appended to Tender Schedule entitled .	
11.2(3)	The <i>completion date</i> for the whole of the <i>services</i> is		
11.2(10)	The following matters will be included in the Risk Register		
11.2(13)	The <i>staff rates</i> are:	name/designation	rate

<sup>1</sup> Available from Engineering Contract Strategies Tel 011 803 3008 Fax 011 803 3009 or [www.ecs.co.za](http://www.ecs.co.za)

**Provision for Panel A of contractors for the Owners Engineer Services to Eskom Transmission Division**

	Either complete here or cross refer to a schedule in Part C2.2		
25.2	The <i>Employer</i> provides access to the following persons, places and things	access to	access date
		1	
		2	
		3	
31.1	The programme identified in the Contract Data is		
50.3	The <i>expenses</i> stated by the <i>Consultant</i> are	item	amount
<b>G</b>	<b>Term contract</b>		
11.2(25)	The <i>task schedule</i> is in		

PART 2: PRICING DATA

PSC3 Option G

Document reference	Title	No of pages
C2.1	Pricing assumptions : Option G	[•]
C2.2	<i>Staff rates, expenses and the task schedule.</i>	[•]

## C2.1 Pricing assumptions: Option G

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

From Option G: Term contract

Identified and defined terms	11 11.2	(17) The Price for Services Provided to Date is, for each Task, the total of <ul style="list-style-type: none"> <li>the Time Charge for work which has been completed on time-based items on the Task Schedule and</li> <li>a proportion of the lump sum price for each other item on the Task Schedule which is the proportion of work completed on that item.</li> </ul>
		(20) The Prices are <ul style="list-style-type: none"> <li>the Time Charge for items described as time based on the Task Schedule and</li> <li>the lump sum price in the Task Schedule for each other item.</li> </ul>

From the Core Clauses:

Identified and defined terms	11.2	(13) The Time Charge is the sum of the products of each of the <i>staff rates</i> multiplied by the total staff time appropriate to that rate properly spent on work in this contract.
------------------------------	------	--

and

Assessing the amount due	50.3	The amount due is <ul style="list-style-type: none"> <li>the Price for Services Provided to Date,</li> <li>the amount of the <i>expenses</i> properly spent by the <i>Consultant</i> in Providing the Services and</li> <li>other amounts to be paid to the <i>Consultant</i> less amounts to be paid by or retained from the <i>Consultant</i>.</li> </ul>
--------------------------	------	---

Any tax which the law requires the *Employer* to pay to the *Consultant* is included in the amount due.

In effect Option G is a cost reimbursable form of contract with work ordered by the *Employer* on a Task by Task basis using the Task Schedule to compile the cost of carrying out a Task.

*Expenses* are calculated separately and added to the amount due for the services provided.

### 2. Staff rates and expenses

Tendering consultants are advised to consult the NEC3 Professional Services Contract Guidance Notes before entering *staff rates* into Contract Data, or in section C2.2 which follows.

This is because *staff rates* can be established in one of three ways:

- rates for named staff,
- rates for categories of staff, or

**Provision for Panel A of contractors for the Owners Engineer Services to Eskom Transmission Division**

- rates related to salaries paid to staff.

Rate adjustment for inflation, if necessary, can be based either on actual salary adjustments or by using Option X1: Price adjustment for inflation. See pages 13 and 14 of the PSC3 Guidance Notes.

*Expenses* associated with employing a staff member in Providing the Services can be listed separately either by the *Employer* in Contract Data provided by the *Employer* or by the *Consultant* in Contract Data provided by the *Consultant*.

As only the *expenses* listed may be claimed by the *Consultant*, all other cost to the *Consultant* associated with Providing the Services must be included within the *staff rates*.

Rate adjustment for inflation of *expenses* is explained on page 15 of the PSC3 Guidance Notes.

### **3. The function of the Task Schedule**

The Task Schedule may include items of work to be paid for on a rate (Time Charge) or on a lump sum price for the item. Any work ordered during the term of the contract – i. e. before the Completion Date – for which there is no priced item in the Task Schedule is priced using the compensation event procedure and the resulting Price is added into the Price List.

The *task schedule* is prepared by the *Employer* for the *Consultant* to price, or may be prepared jointly with the *Consultant*. It is typically priced in two parts as items of work to be carried out on a time basis and lump sum prices for other items of work. The task schedule must be as complete as possible and fully representative of all the work and *services* which the *Employer* may require the *Consultant* to carry out. The only unknown is when the work is to be carried out; the Task Order will be used to instruct when work to be done.

## C2.2 Staff rates, expenses & the task schedule

This section can be used when the *staff rates* and *expenses* are considerable in number and more conveniently located here than in the Contract Data. Entries in the Contract Data should refer to this section of Part 2.

State whether the *staff rates* and *expenses* exclude or include VAT.

### 1. The *staff rates* are:

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<b><u>ALL PRICES TO BE PRICED AS PER TASK ORDER SERVICES</u></b>				
	<b><u>Concept Release Approval (CRA) - Final Release Approval (FRA)</u></b>				
	<b><u>Project Management :</u></b>				
1	Project manager (Pr CPM)	Hours			
2	Candidate Project manager (Can CMP)	Hours			
3	Land Surveyor	Hours			
4	Environmental Specialist	Hours			
5	Property Valuer (Professional Registered)	Hours			
6	Land Acquisition Manager	Hours			
7	Safety Specialist (Professionally Registered)	Hours			
8	Documentation Controller	Hours			
9	Contract Management Specialist	Hours			
	<b><u>Subject Matter Expert :</u></b>				
10	Professional Registered Electrical Engineer (PrEng)	Hours			
11	Candidate Registered Electrical Engineer	Hours			
12	Professional Electrical Technical Engineer	Hours			

**Provision for Panel A of contractors for the Owners Engineer Services to Eskom Transmission Division**

	(PrTech)			
13	Candidate Electrical Technical Engineer (CanTech)	Hours		
14	Professionally Registered Civil Engineer (Pr Eng)	Hours		
15	Candidate Registered Civil Engineer (Can Tech)	Hours		
16	Professional Civil Technical Engineer (Pr Tech)	Hours		
17	Candidate Civil Technical Engineer (Pr Tech)	Hours		
18	Professionally Registered Mechanical Engineer (Pr Eng)	Hours		
19	Candidate Mechanical Engineer (Can Tech)	Hours		
20	Professional Mechanical Technical Engineer (Pr Tech)	Hours		
21	Candidate Mechanical Technical Engineer (Can Tech)	Hours		
22	Professionally Registered Quantity Surveyor	Hours		
23	Candidate Quantity Surveyor	Hours		
24	Professional Architect (PrArch)	Hours		
25	Candidate Architect (Can Arch)	Hours		
	<b><u>Support Services:</u></b>			
26	- Contracts Specialist	Hours		
27	SAP Specialist	Hours		
28	Quality Specialist (with technical background)	Hours		
	<b><u>Procurement Services:</u></b>			
29	Category / Senior Manager	Hours		

**Provision for Panel A of contractors for the Owners Engineer Services to Eskom Transmission Division**

30	Commodity / Procurement Manager	Hours			
31	Sourcing Specialist	Hours			
32	Procurement Specialist / Senior Buyer	Hours			
33	Research Analyst	Hours			
	<b><u>Disbursement:</u></b>				
	<b><u>Expenses / Disbursement : All Travel arrangement for site visits must be done 7 working days prior travelling and must be approved by Task Order Manager/Owner.</u></b>				
	-				
	-				
34	Travelling to site	km	Eskom Rate	R 3.60	
35	Travelling to site - On problematic access site, 4 x 2 or 4 x 4 are only booked on Managers discretion (paid on actual rental cost)	day			
36	Travelling to site - Hired car - Class B (paid on actual rental costs).	day			
37	Travelling to site - Airfreight -Economy Class (paid on actual costs).				
38	- Accomodation (3 star hotel) as per National Treasury guideline. All the cost will be paid on actuals	day			

**2. The expenses are:**

No.	Expense item	Amount / rate excluding VAT



**Provision for Panel A of contractors for the Owners Engineer Services to Eskom Transmission Division****3. The task schedule**

The following format could be used:

No.	Items of work to be carried out on a time basis

No.	Items of work priced on a lump sum basis	Price (excluding VAT)

## PART 3: SCOPE OF WORK

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C3.2	<i>Consultant's Scope</i>	
	Total number of pages	

## C3.1: EMPLOYER'S SCOPE

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## 1 ABBREVIATIONS

This list contains the abbreviations used in this document.

Abbreviation	Description
AC	Alternating Current
ACCC	Aluminium Conductor Composite Core
ACSS	Aluminium Conductor Steel Supported
ADSS	All Dielectric Self-supporting
AIS	Air Insulated Switchgear
B. Tech	Bachelor of Technology
BEng	Bachelor of Engineering
BIL	Basic Insulation Level
BSc	Bachelor of Science
BU	Business Unit
CAD	Computer-aided Design
CSI	Corporate Social Investment
EAP	Environmental Authorisation Practitioner
ECSA	Engineering Council of South Africa
EHV	Extra High voltage
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EPC	Engineer Procurement Construction
EPCM	Engineer Procurement Construction Management
GIS	Gas Insulated Switch gear
HV	High Voltage
HVDC	High voltage Direct Current
IEC	International Electrotechnical Commission
IPP	Independent Power Producer
IRP2019	Integrated Resource Plan 2019
ISO	International Organization for Standardization
IT	Information Technology
KPI	Key Performance Indicators
LES	Line Engineering Services
LV	Low Voltage
MV	Medium Voltage
NDA	Non-Disclosure Agreement
NEC3 - ECC	New Engineering Contract 3 - Engineering and Construction Contract
OE	Owners Engineer
OPGW	Optical Ground Wire
PC	Personal Computer
PCM	Process Control Manual
PD	Project Development
PDRA	Project Definition Readiness Assessments
PLCM	Project Life Cycle Model

PM	Project Manager
PMBok	Project Management Body of Knowledge
PQMP	Project Quality Management Plan
PSCAD	Power Systems Computer Aided Design
PTMC	Protection, Telecommunications, Metering, and Control
QITP	Quality Inspection & Test Plan
RAM	Reliability, Availability, Maintainability
RBI	Risk Based Inspection
RF	Radio frequency
SABS	South Africa Bureau of Standards
SACPCMP	South African Council for Project and Construction Management Professions
SAP	Systems, Applications and Products
SCADA	Supervisory Control and Data Acquisition
SCOPs	Supply Chain Operations procedures
SDL&I	Supplier Development, Localisation and Industrialisation
SHE	Safety, Health and Environmental
SHEQ	Safety, Health, Environment and Quality
SLA	Service Level Agreement
TDP	Transmission Development Plan
TPD	Transmission Projects Delivery
Tx	Transmission
WBS	Work Breakdown Structure

## 2 DEFINITIONS

Definition	Description
Design Authority	Design Authority - When Eskom acts as the Design Authority on a project/package/plant/system/asset, the reviewer(s) shall review the design documentation to ensure that: the design satisfies the design requirements; all relevant COE design standards, procedures and guidelines have been adhered to; the design is suitable and correct (calculations, philosophy, functionality, etc.); best COE practices were applied; the design is integrated by identifying all interfaces with other packages/plant systems/assets and ensuring that these interfaces are catered for.
Consultant	Refers to the professional <i>Consultant</i> team appointed to perform the works required for the project in terms of the NEC3 Professional Services Contract.
Eskom Transmission Engineering	Refers to the Eskom Engineering team who will perform the design review and provide technical assistance for the work performed by the appointed <i>Owners Engineer</i> .
The Client	The end user will be Eskom who will be represented by Transmission Division
Contractor	Service provider contracted to provide a specific service to Eskom.
<i>Employer</i>	Eskom, or Eskom Transmission or delegated <i>Employer's</i> representative.
Owners Engineer	A professionally registered Engineer, or team of appropriately registered Built Environment professionals including engineers, appointed to provide oversight of the project's design, development,

Definition	Description
	execution, and/or finalization on behalf of the Owner. This role may be outsourced to the extent the Owner lacks the necessary skills and/or resources. In matters concerning the administration of an EPC contract, a person fulfilling the role of Owner's Engineer may also be the appointed Contract Custodian

### 3 APPLICABLE DOCUMENTS STANDARDS, GUIDELINES, HANDBOOKS AND REGULATIONS

Applicable documents form an integral part of service delivery associated with project management in Eskom, the below documents will be provided upon request and remains the copyright property of Eskom Holdings and required Non-Disclosure Agreements (NDA) will be applicable.

Please use the latest revision of the applicable document

- 3.1 ISO 9001 Quality Management Systems
- 3.2 ISO14001: Environmental Management System
- 3.3 ISO45001: Occupational Health & Safety Management System
- 3.4 OHSA - Occupational Health and Safety Act, 85 of 1993 and Regulations
- 3.5 240-53113685 Design Review Procedure
- 3.6 32-1034 Eskom Procurement and Supply Chain Management Procedure
- 3.7 Public Finance Management Act
- 3.8 32-727: SHEQ Policy
- 3.9 Transmission Project Life Cycle Model and Work Package Standard, 240-76628703

### 4 EXECUTIVE OVERVIEW

#### 4.1 Introduction

This document outlines the Scope of services required from the *Consultant* for the provision of Owners Engineer (OE) Services to Eskom Transmission Division.

Eskom has a need to increase its capacity to develop projects to final design readiness and to exercise oversight over construction projects. This will be achieved by the deployment of strategies including but not limited to the OE approach. The OE scope is defined herein.

The Scope of Work document is necessary to stipulate the variety of services required from the appointed Owners Engineer.

#### 4.2 Employer's Objective

The *Employer's* objective is to appoint an Owners Engineer that will benefit the Eskom Transmission business by:

- 4.2.1 Providing a full suite of professional project development, design, project management and technical assurance services.
- 4.2.2 Reducing excessive workload on Transmission resources therefore ensuring more focused work on project development and project implementation oversight.

#### 4.3 Background



An external services provider is required to augment Transmission resources when the need arises, through the provision of specialised OE services. The service provider will work with Transmission resources to support the business when Eskom does not have adequate internal resources with the required skills and competencies.

The *Employer* will, from time to time, depending on services required, appoint the service provider to provide services on a specific project. The service required is for the OE consultants to develop projects to the point where they are ready to be released for execution phase, prepare tender documents, resolve EPC technical queries (post ERA) and / or manage Engineer Procurement Construction (EPC) contractors who are awarded contracts for the execution of projects to meet the targets of Transmission. This will help address skills constraints, provide expertise and drive targets to meet TDP and Integrated Resource Plan (IRP) requirements.

For each of the services required, a short description of the service has been included below. Services are to be provided on an as-and-when required basis.

## 5 Summary of Services

The Owners Engineer shall provide a full suite of services to Eskom Transmission to complement the business.

The Consultant shall source the relevant and multiple skills sets and disciplines required to realise this scope, taking into account relevant qualifications, knowledge, experience and professional affiliation.

The suite of services includes the following:

- Land development - The consultant must ensure that the project has all the required and legislated environmental approvals and permits to release the project for execution as well as all the land and servitudes
- Land Survey - The surveying of all line servitudes and substation sites as required by the project and disciplines to enable acquisition, design and construction. Land survey services to be conducted by suitably qualified professionals using recognised and approved methodologies.
- Project Management
- Supply professional engineering services to complete the basic engineering deliverables and design of Transmission Projects and to supply all the necessary engineering deliverables for procurement and construction.
- Supply professional engineering services to review the detail engineering deliverables provided by the Client and or Third Parties, to integrate and co-ordinate the overall engineering activities and interfaces of Third Parties.
- Turn Eskom's User Requirements Specification into Functional Specifications, Standard Specifications and Plant Systems Optimisation and Capital Cost Estimates.
- Prepare Technical Specifications.
- Perform technical evaluation of EPC tenders.
- Provide professional assistance for the procurement of the packages identified for the Project.
- Provide tender technical specification for integration of Substation design and in line with associated equipment.

## 6 WORK TO BE DONE FOR PROJECT DEVELOPMENT

### 6.1 Engineering

The OE scope will involve the following activities:

- Receiving identified projects URS's and project Concept Release Approval from Eskom's Project Development Department
- Accountable for performing basic design scope
- Performing OE roles in the final design and execution phase, in line with Eskom hold points, being design review, review of specifications, reviewing constructability, executing engineering tasks as per quality hold points, witnessing testing and commissioning, contract management, reporting

The OE scope for engineering activities during project development and for management of the appointed EPC contractor are further expanded in this document, but not limited to this document.

### **6.1.1 Engineering outputs - basic design across all disciplines**

Basic design refers to the following, but not limited to, engineering activities associated with the design of power and telecommunications network infrastructure; utilising standard developed products which are typically available on Supply Contracts that Eskom has established with third party vendors.

### **6.1.2 Technical Tender Evaluations**

The Owners Engineer shall conduct technical evaluations of EPC bidders based on the approved basic design, as per Eskom's technical tender evaluation procedures for an integrated SOW. The OE shall manage the required stakeholder interfaces post the evaluations (corporate security, PDD, Grids, SO, external parties)

## **6.2 Quantity Surveyor Services**

Procurements Document Support including but not limited to:

- Costing for all plant. This includes materials, labour (design and commissioning), preliminaries and general and any other project costs
- Ordering schedules/ Bill of Materials for all plant equipment

## **6.3 Commercial Management**

The Owners Engineer shall prepare the terms and conditions of contract required for compliance to Eskom Transmissions requirements as well as external funders, e.g. World Bank processes.

### **6.3.1 Bid Document Preparation**

The Consultant shall, on behalf of the Client procurement team, develop procurement documentation for all types of contracts on the project and shall ensure these are to a level accepted by the World Bank.

### **6.3.2 Bid Evaluations**

In accordance with the World Bank procedures and policies, the Consultant shall assist in the evaluation of bids to determine the bidders' ability to meet the commercial, legal and financial requirements of bids. The Consultant shall be involved in every process necessary to submit to the bank an evaluation report with a recommendation on the successful supplier.

### **6.3.3 Contract Administration**

The EPC Contract established for the Project shall be administered by the Consultant on behalf of the Client.

## 6.4 Statutory and Approval Requirements

### 6.4.1 Technical Specifications and Design Reviews

Technical Specification, design base and specialised studies

- Application and adherence to Eskom Design Standards, Specifications, best practises, NRS, SABS and IEC standards, Occupation Health and Safety (OHS) act, Construction and relevant regulations for the EPC scope, etc.
- Compile technical specification and develop new design base if and where required.
- Perform and / or analyse specialised HV studies.

Technical Design Reviews

- Engineering processes and deliverables are to comply with statutory regulations and Eskom Transmission governance, philosophies, standards and accepted practices, and are to be delivered to Eskom in a format and on media to be specified with each project.
- All designs are to be approved by a competent ECSA-registered professional and support to be obtained by the consultants from the relevant Transmission Design Review Committees in line with Eskom's PLCM.

### 6.4.2 Technical Hold Points

Technical hold points are required to ensure design compliance, which the OE is responsible for managing.

- Engineering Design Review (Basic and Final design, drawings)
- Stakeholders and Site Meetings
- Control Configuration Change (Design change) during Project construction
- PDRAs (Project Definition Readiness Assessments)

## 6.5 Safety, Environmental and Quality

The Client expects the OE to engage in safety culture initiatives in line with the Eskom Safety and Quality Requirements Standard. The Consultant and all sub-Consultants shall comply to Eskom Transmissions requirements.

Occupational Health and Safety Act, 85 of 1993 and Regulations, applicable legal information from the South African National Standards (SANS) but not limited to, which may apply to requirements at the *Employer's* workplace / sites.

The OE shall provide objective evidence of documented but not limited to:

- Valid certification of an OH&S system by an ISO Accredited Body or a draft/example of an OHS systems that is not certified but complies with ISO 45001:2018.
- Valid Letter of Good Standing (COIDA or equivalent).
- The OHS Policy must adhere to Section 7 of the OHS Act, 85 of 1993 and signed by the CEO.
- A draft/example Health & Safety Plan outlining its dedication OH&S
- A draft/example Competency Matrix or Proof of Competency for each job category in accordance with the OHS Act, 85 of 1993 and South African Council for the Project and Construction Management Professions (SACPCMP)

Environmental Management Requirements – The OE shall operate an Environmental Management System that comply with:

South African National Environmental Management Acts, Regulations, By-laws, applicable legal information from the South African National Standards (SANS) as well as applicable international standards such as an ISO 14001:2015 management system. etc.

The OE shall provide objective evidence of documented but not limited to:

- Valid certification of an EMS by an ISO Accredited Body or a draft/example of an EMS that is not certified but complies with ISO 14001:2015.

Quality Management Requirements – The OE should demonstrate leadership and commitment as part of demonstrating their understanding of quality.

The EPCM/Consultant should provide objective evidence of documented but not limited to:

- Valid certification of a QMS by an ISO Accredited Body or a draft/example of a QMS that is not certified but complies with ISO 9001:2015.

## 6.6 Engineering Design and Draughting (MICROSTATION)

Provide Engineering Drafting (Substations: Electrical and Civil (incl. main steel and supports), PTM&C, LES)

- Create drawing master files
- Produce project design drawings (Electrical, Secondary plant and Civil)
- Update marked up drawings
- Check in/out drawings using Eskom approved configuration management systems

## 6.7 Line Engineering

Engineering activities and basic design outputs include inter-alia:

- Route Selection activities
- Profiles generated from DEM data
- Geotechnical studies - desktop
- Engineering survey activities (including and not limited to final route bend point pegging, data digitizing, option sketches, spatial information preparation, etc.)
- Lidar acquisition
- Line communications (OPGW, ADSS/ADLash etc.) replacement activities and audits
- Power line tower selection
- Power line tower designs – detailed designs and testing (manage testing by Eskom Tower Test Station)
- Bypass design – profiling, earthing, tower analysis etc.
- Review of templates and specifications used for EPC projects
- Wayleave applications – technical analysis of the profiles and related electrical/mechanical studies submitted as part of wayleave applications
- 

## 6.8 PTMC Engineering

*Protection, Telecommunications, Metering, Telecontrol, DC, Physical Perimeter Security and Physical Access Control System Application Design*

### 6.8.1 Engineering activities and design outputs include inter-alia:

- Scoping and design to meet all secondary plant requirements, including protection, tele-protection, metering, tele-control and AC/DC auxiliaries
- Site visits for audit purposes.
- Preparation of cable schedules for all secondary plant
- Metering/ measurements ratio calculations
- Review and acceptance of Station Electrical Diagrams
- Review and acceptance of Phasing Diagrams
- Basic Design drawings,
- Development of Fibre Network Diagram (for both single and multimode fibre)
- Control Room Layout in terms of panel placement or even increasing the size of the control room due to lack of space.
- Telecommunication specific Operational Technology Voice, Videoconference, Radio and Fibre Optic, Multi-service Access Platform, IP router, SDH and Optical transport Network designs (See telecommunications planning and application at green sites for more detail)
- Access control, CCTV, Security Alarm, Intrusion detection and Electric fence designs.

## 6.8.2 Telecommunications Planning & Applications Engineering

Engineering activities and design outputs include inter-alia:

- Compile Basic Design for Operational Technology Voice, Videoconference, Radio and Fibre Optic, Multi-Service Access Platform, IP router, SDH, Optical transport Network, Operational Support System and Operational Technology Cybersecurity and Smart Grid Telecoms.
- Compile basic design for telecoms towers, tower foundations, earthing, roads, geo-tech, structural inspection and analysis, tower detailing and testing requirements.
- Compile basic design for facilities which includes site civil works, equipment building, DC, batteries, fire protection, fencing and gates, CCTV, tower lights, air-cons, alarm systems, plinth and containers where necessary.
- Site visits for audits
- Provide technical requirements for land and rights negotiation and acquisition.
- Provide input and support to engineering/planning process tools and database design/management.
- Provide specialised studies
- Telecommunications network configuration and capacity analysis of integrated Transmission and Distribution networks.
- Network performance analysis for investment decision making.
- Radio link propagation and optical link budget design (including site visits).
- Owners engineer to have high-specification computers/laptops with Eskom approved engineering applications (e.g., Pathloss, ICS Telecoms, and PLS CAD etc.)
- Owners engineer to provide own radio site survey tools (e.g. binoculars, GPS and 1/50000 maps, measuring tools, mirrors for line-of-sight checks, etc)

## 6.9 Substation Engineering

### 6.9.1 Substation Works

Engineering activities and design outputs include inter-alia:

- Site selection
- Terrace geometric design drawings
- Flood analysis report
- Storm water management plan report
- Station Line Diagram Options (if applicable)
- Station Electric Diagram
- Key Plan
- Terrace design and access road route (if applicable)
- Prelim Equipment and material schedules
- Desktop and detailed site Geotechnical studies
- Busbar Layout
- Survey data & Lidar scans
- Safety and Security Fence Drawings incl. threat risks analysis report
- Earthing design
- Basic Design Report

## 6.10 Land and Rights Development

### 6.10.1 Environmental Services

The provision of Environmental Services and associated services to the Transmission business include Environmental Impact Studies/ Assessments, Environmental Management Plans/ Programmes, Environmental Management Control and Assurance, Special Environmental Studies, Opinion and Advice that is required in terms of environmental legislation. The consultant's role is to appoint, manage and oversee accredited EAP and other service providers in accordance with legislation to complete the activities. The consultant must ensure that

the project has all the required and legislated environmental approvals and permits to release the project for execution

### **6.10.2 Land Survey**

The surveying of all line servitudes and substation sites as required by the project and disciplines to enable acquisition, design and construction. Land survey services to be conducted by suitably qualified professionals using recognised and approved methodologies.

### **6.10.3 Land Valuation**

Eskom requires Land Rights for infrastructure development. These Land Rights are acquired through negotiations with Owners. Negotiations are subjective and it therefore necessary to establish objective principles and procedures to govern the acquisition of Land Rights. Valuations are required to establish the quantum of the servitude acquisition process. These valuations must adhere to all South African legislation and be defensible if required. The consultant must appoint an independent Valuer to perform the land valuation services. The Valuer must be registered in terms of the South African Land Valuers Professionals Act, 23 of 2000, who may or may not be on Eskom's panel of valuers, but who is expected to execute its duties independently of the interests of Eskom and the Owner. Eskom reserves the right to approve or not approve the identified Valuer. The Valuer signing the Valuation Report must be in possession of an unrestricted registration, or a valuer in possession of an unrestricted registration must sign off the Valuation Report.

The Valuer must consider all the relevant legislation, government policies, guidelines, applicable industry norms, business principles.

The overall and specific impacts of the infrastructure on the specific land with its unique attributes are considered with regard to the valuation of the Land Rights, and also certain other payments as provided for in legislation. The calculation of the consideration due to the Owner differentiates between the determination of Market Value and establishing financial loss.

#### **Types of Valuations Applied and Deliverables Required:**

The Valuer may use the following methods or methodologies of valuation and may determine what the most appropriate method in a given situation will be, such as:

Strip, Site-specific, Economic, Actual Financial Loss, Comparative sales, Before-and-after, Income-based Replacement cost

### **6.10.4 Land / servitude acquisition**

The scope of works includes the following activities:

#### **Negotiations**

- Visit / Liaise with landowner.
- Negotiate route alignment in consultation with Land Owners.
- Obtain mandate to negotiate
- Negotiate Eskom approved consideration.
- Negotiate and document special condition/s.
- Complete and acquire owner's signature on Eskom Option to Acquire Servitude Documents.

### **6.10.5 Special Consulting Work**

- Public participation during Environmental Impact Assessment (EIA) process.
- route and site selection.
- Confirm affected properties (Land Parcels) by means of obtaining all relevant farm and subdivision diagrams from the Surveyor General's office.
- Locate legal owner of property affected by Eskom plant by means of obtaining Deeds information of all affected properties.
- Attend pre-resolution meetings.

- Attend resolution meetings.
- Post meeting adverts in affected communities.

#### 6.10.6 Involuntary & Voluntary Resettlement and Relocation

- Public Participation with the Tribal Authority and affected community members.
- Visit each household affected by the line and capture relevant details.
- Determine the replacement cost of each of the properties.
- Facilitate compensation
- Monitor the relocation process.
- Ensures that all affected property owners are paid and relocated as per the agreement.

### 6.11 Project Management

The project management services required are based and supported by the ten knowledge areas of the Project Management Body of Knowledge (PMBok), namely Integration, Scope, Time, Cost, Quality, Risk, Communication, Procurement, Stakeholder Management and Human Resources (HR) and in accordance with the Eskom PLCM including relevant sub-sets. In addition, there is a special emphasis on the management of safety, health, and environmental risks.

The appointed resources will familiarise themselves and abide by Eskom's health and safety rules and procedures, Values and Ethics. Project development management work will be performed in line with standard practices as implemented in Eskom.

All meetings, decisions and studies will be properly documented and recorded to be available at all times and for future reference.

Specific projects will be allocated to the consultants but can however be changed through deletions and additions, by mutual agreement between the *Employer* and the Consultant.

The consultant will cooperate with the relevant stakeholders to ensure that the necessary information (cost and schedules) is included in the Eskom plans. The consultant must coordinate, prepare and administrate any required submissions for investment approvals and modifications of investment decisions.

The consultant will ensure that interdependent work and scope, such as associated Distribution, Generation, Customer and Independent Power Producer projects is aligned, integrated and managed.

The progress of projects that are in execution must be monitored continually and relevant systems and reports updated.

#### 6.11.1 Project Manager and other Key Persons

The OE shall provide a mature and experienced project management team that can fully manage the scope of services required of the EPC contractor. This group will be headed by the Owners Engineer Project Manager who will have the overall responsibility.

#### 6.11.2 General Management

- Responsible for the management of the project Interfaces inside Transmission (Grid Planning, Grids, Engineering, Construction Management, Lands and Rights, etc.) and where applicable outside Transmission (external customers, stakeholders, Distribution, Generation, etc.).
- Organise and chair meetings
- Lead and control other disciplines to develop deliverables required by the project
- Follow up on deliverables
- Communicate
- All meetings, decisions, studies, etc. will be properly documented and stored?

- Report
- Management of project related budgets and costs including working on SAP PPM

### **6.11.3 Project management deliverables**

- Project charter
- Estimates for different phases of the project
- Project time plan - updated project schedule in Primavera P6
- Compile, establish and manage internal and external contracts for the development work required to package the project for EPC
- Project reviews / Project Definition Readiness Assessments (PDRA's)
- Obtain the required Release Approvals for the implementation of the project.
- Responsibilities (RACI matrix) and stakeholder plan
- Project development reports
- Project managing the design and engineering deliverables
- Project managing the Land and Rights deliverables

### **6.11.4 Quantity Surveying**

The provision of Quantity Surveying work shall be provided by a registered Professional Quantity Surveyor.

### **6.11.5 Programme and Scheduling**

The Consultant shall submit a programme to the Client that includes the following:

- The dates by which the Client has to provide items or data to the Consultant that are required by the Consultant to deliver the services,
- Submission of Deliverable to the Client for review,
- Review Meetings,
- Milestone Dates (The Milestone Dates coincide with the assessments dates for payments.)
- Methodology for measuring progress of engineering activities.

### **6.11.6 Progress Reporting**

The OE shall submit progress reports on a monthly basis, within one week after the end of each calendar month. The progress report, using the activity schedule as a basis, will cover the following issues:

- Cost, schedule and technical performance to date,
- Estimated cost, schedule and technical accomplishment at contract completion,
- Highlights,
- Problem areas and corrective actions,
- Risk Progress Report.
- Progress reporting on Quality Activities, and Indicators

The progress reports will be discussed during scheduled Progress Review Meetings. The OE shall propose to the Client a schedule for the Progress Review Meetings. The Progress Review Meetings will be held within one week after receipt of the progress report. The Client shall keep minutes of these meetings.

### **6.11.7 Configuration Management**



The Consultant is responsible for identifying, defining, documenting and controlling all interfaces for which he is contractually responsible. The Owners Engineer operates and maintains a system that manages the configuration of relevant information exchanged between the Owners Engineer and the Client.

### **6.11.8 Occupational Safety, Health, Environment ,Quality, and Security Requirements**

#### **6.11.8.1 Occupational Safety and Health requirements**

The Owners Engineer shall at all times comply with the South African health and safety requirements as prescribed by the Occupational Health and Safety Act, 85 of 1993 and Regulations, including applicable South African National Standards (SANS) as they may apply to the services and to the health and safety requirements applicable at any of the *Employer's* workplaces and/or sites.

The Owners Engineer should possess the following:

- Health & Safety Plan outlining its dedication H&S.
- A valid letter of Good Standing (COIDA or equivalent).
- Competency Matrix or Proof of Competency for each job category in accordance with the OHS Act and SACPCMP requirements.
- The OHS Policy must adhere to Section 7 of the OHS Act and signed by the CEO.
- An ISO 45001:2018 management system or one that satisfies its requirements, must demonstrate leadership, commitment, culture, communication, responsibility, and accountability through a certified management system and/or management system documentation.

#### **6.11.8.2 Environmental Management Requirements**

The Owners Engineer shall operate an Environmental Management System that complies with National Environmental Management Acts, Regulations, By-laws, as well as applicable international standards such as an ISO 14001:2015 management system. The Owners Engineer must demonstrate leadership, commitment, responsibility, and authority through a certified management system and/or management system documentation.

#### **6.11.8.3 Security Management Requirements**

The Owners Engineer shall follow all site entry requirements established by the *Employer*, particularly those outlined in the Critical Infrastructure Protection Act 8 of 2019.

Security Management Requirements – The OE shall always adhere to:

All site entry requirements established by the *Employer*, particularly those outlined in the Critical Infrastructure Protection Act 8 of 2019.

The OE shall provide objective evidence of documented but not limited to:

- Proof of criminal records / clearance results of employees.
- Note: Clearance results valid for 12 months.

#### **6.11.8.4 Risk Analysis and Quantification**

The work is to analyse, consolidate and report on project risks and issues, to provide advice and an independent view of project risks for the delivery unit.

Key Performance Areas:

- Direct and coordinate the development of project risk plans
- Analyse, consolidate, and report on information received from functional teams within the delivery unit to monitor the status of risks and issues
- Manage, review and report on the implementation of the project risk management methodology
- Advise and report on the project risk management system for the delivery unit
- Maintain communication and relationships with key internal and external stakeholders.

#### **6.11.8.5 Stakeholder Management Plan**

Obtaining and defining the needs/requirements and expectations of all stakeholders (users, internal and external stakeholders, public interest groups, clients, customers, etc.).

#### **6.11.8.6 Socio-Economic Risk and Stability Plan**

Project Stability includes stability support services throughout the project life cycle to minimise disruption of project execution by the contractor, contractor labour, members of the community and other external stakeholders, thereby supporting Eskom's socioeconomic mandate, social license to operate, a stable environment for project execution, control and financial savings/cost avoidance, as well as positive organisational reputation. The aim is to minimise acts of instability to empower the organisation to complete projects on time, within cost and quality, thereby supporting a stable environment for project execution, control and financial savings.

The Scope of work will include the following:

- Actively provide input in the critical project front-end planning phases such as socioeconomic impact assessment study, stakeholder identification and analysis, site selection, risk identification, analysis and mitigation and stakeholder management plan.
- Establishing the Eskom Stability Requirements to be included in the commercial contracts (NEC3, FIDIC or any other form of contracting)
- Conducting security / stability / risk assessments
- This entails studying and engaging with the communities in the areas where construction will happen and:
  - Identification of problem areas – current and future projection
  - Developing project stakeholder matrix, this may include ward councillors, traditional/community leaders, local businesses, minibus taxi entities, etc.
  - Identification of potential social investment needs/initiatives
  - Research and keeping abreast of amendments to legislation, industry agreements to enable inclusion in any plans and contracting strategies:

#### **6.11.8.7 Contracting and Procurement Strategy and Plan**

The Contracting and Procurement strategy outlines the way the project will plan and manage its contracts and any required procurement. The Procurement Management Plan details the procurement schedule, who is responsible and where the procured resources are to be delivered. The Owners Engineer to develop the appropriate contracting strategy and plan to suit the requirements of an EPC contractor executing the project.

The Owners Engineer is to ensure that suitably skilled and accredited resources are used to develop these packages.

### **7 Owners engineer deliverables to manage EPC Contractor**

The OE consultant is to ensure that suitably skilled and accredited resources are used to facilitate the appointment of the EPC contractor and to manage the appointed EPC contractor on behalf of Transmission to ensure that requirements are met.

#### **7.1 Appointment of EPC Contractor**

If the Client decides to use the OE consultant to facilitate the appointment of the EPC contractor on their behalf, then the OE must ensure that suitably skilled and accredited resources are provided so that they work within and according to Transmission's systems, policies and procedures.

## 7.2 Project Management

The EPC contractor will have the accountability to do all that is required to construct the assets. The OE consultant will be responsible to manage the EPC contractor and do the necessary work and administration to ensure the scope of work is delivered within cost, quality and time. This includes:

- Ensuring that the EPC contractor has proper systems and structures in place to manage schedules, cost, materials, communication and reporting, security, SHEQ
- Review construction/execution plans and provide inputs on project constructability, reviewing lessons learnt from previous projects influencing construction execution strategies, construction risk identification and construction resource planning
- Keep an updated project schedule in Primavera P6, integrate it into the Eskom system for dashboard reporting purposes
- Monitoring and measuring the project performance in an objective manner and monitor the value of the work completed against the project baseline and actual cost incurred to date in order to evaluate if the project is on track.
- Analysing project uncertainty
- Monitoring and Controlling of Project Controls, includes periodically measuring the physical progress
- Analysis of project performance, recommendations for corrective actions and reporting
- Confirming milestones with stakeholders and customers
- Ensures that an effective communication system is in place to provide timely feedback for management, client and customers
- Regular progress meetings with the EPC and the Client
- Ensure that all project matters are properly documented and filed as per the Eskom requirement

## 7.3 Contract Management

Ensure that standardised and consistent processes, procedures, standards and tools are applied to manage contracts. The Contract Management capability is applicable - from the establishment of a Contract Management environment to contract closure, including the management of contract execution to ensure that objectives are achieved. The Scope of Work includes the following:

- Execute Contracts: The management and administration of the contract terms, conditions and obligations, after final award, as well as the management of the relationship between Eskom and the contractor, and any changes to the contract within the framework of Eskom policies and procedures, and National Treasury requirements
- Assess Contractors/Consultants deliverables for payment: This entails assessing the deliverables from Contractors/Consultants against the specifications set out in the contract, to enable payment on completion of the work. Progress must be properly assessed and payment due must be certified on time.
- Administer Controlling of Bonds and Guarantees. This entails the administration of bonds and guarantees as set and agreed within the contract conditions. Ensure that bonds and guarantees are accurately managed.
- Manage Variation. Ensure successful conclusion of variations to contractual scope of work. This includes engagement with contractors.
- Close-Out Contracts: The completion and final settlement of a contract, including the resolution of any open contract items.

- Manage Take-over. Take-over from Contractors and hand over to plant owners is conducted in a controlled, efficient and appropriate manner. Ensure that all criteria are fulfilled prior to the issuing of a Take-over certificate.
- Terminate Contract prior to Completion. Manage the event when a contract is terminated early prior to completion by either party and ensure that it is managed in a fair and appropriate manner according to the relevant contractual terms and conditions. Ensure that contracts are terminated properly when required.

## 7.4 Engineering Assurance / Verification

The OE consultant will have the responsibility to ensure that the EPC contractor constructs the project assets to meet the objectives of the client and according to scope, design, quality and operational requirements. This includes:

- Assurance/verification that the EPC designs are in line with Tx requirements and are accepted.
- Assurance/verification that the EPC uses pre-approved equipment as identified by Tx
- Assurance/verification that that material and equipment not nominated by Tx but procured by the EPC contractor meets the required standards and specifications and are accepted by Tx. This may include factory visits or other methods of verification
- Managing and assurance at witness and hold points
- Design clarification and managing of design disputes
- Ensure that all project engineering matters are properly documented and filed on the appropriate Eskom system, including as-built documentation.
- Required engineering design base documentation inclusion of all configuration, maintenance and operating standards
- Ensure that an accepted commissioning plan is developed
- Managing and assurance during pre-commissioning

### 7.4.1 Engineering Requirements for OE managing EPC contractor

This section covers the engineering requirements of the OE in the final design and execution phase per discipline.

#### 7.4.2 Line Engineering

- Coordinate detailed design approvals (EPC designs) as per the specifications and detailed design report/presentation templates developed by Lines Engineering
- Liaise with internal Transmission stakeholders for inputs into the scope for detailed design
- Cross functional team squad checks
- PDRA document preparation and presentation
- Site clarifications with EPC contractor before EPC contract is awarded
- Line walkdown with EMPPr team
- Link during specific hold points at construction stage (between EPC contractor and client).
- As built documentation and TxSIS data for completed projects

#### 7.4.3 PTMC Engineering

Engineering processes and deliverables are to comply with statutory regulations and Eskom Transmission governance, philosophies, standards and accepted practices, and are to be delivered to Eskom in a format and on a media to be specified with each task order. All designs are to be approved by a competent ECSA registered professional.

The Owners engineer to apply to the relevant Eskom departments (e.g. Settings Department) for the Protection Settings, SCADA/Control database, interlocking rules, IP address allocation, Substation/IED IEC 61850 CID,

SCD, ICD database file design/definition/creation, Line trap PLC propagation studies and PLC frequency allocations.

The OE is responsible to provide all the necessary documentation and to request from Eskom the relevant information as per the dates on the high-level project schedule. Eskom may, at Eskom's discretion, include the above in the OE's scope.

For physical security, a Threat and Risk assessment must be sourced from Transmission security. The OE will be required to compile a Stakeholder URS for approval by the relevant Transmission Grid manager and EPC SOW (including Eskom's functional specifications).

OE to have oversight on the following:

- Cable schedules
- All secondary plant drawings for "to build" and "as-build" purposes
- Commissioning as per Eskom standards
- Training of Eskom staff prior to handover as and when required
- Life cycle costing

#### **7.4.4 Mandatory Telecommunications Processes**

An application is required to the relevant Eskom departments (e.g. NMC) for the allocation of the circuit numbers, IP addresses, network configurations and application for ICASA frequency allocations.

#### **7.4.5 Substation Engineering**

OE's responsibilities shall include, but not be limited to:

- Manage development of detailed designs by EPC in accordance with specified EPC contract SOW
- Review and manage all relevant electrical design documentation such as (Station Electric Diagram, Key Plan, Electrical Bay layouts, Busbar Layouts, Earthmat, Overhead earth wire layout, etc.)
- Review and manage all relevant civil design documentation such as (Terrace Design, Site Contour Plan, Building General Arrangements, Transformer and Reactor Plinths, Steelwork Marking plan, Foundation and Trench, HVAC Design, Cable Route Layout, etc.)
- Review all engineering drawings including architectural/landscaping drawings from basic design through to final construction and record drawings in hard copies and/or electronic format
- Provide expertise and oversight on detailed design requirements, during detail design approval, and during technical/contract evaluation
- Review and validate all power systems studies required for a specific project.

#### **7.5 Engineering Requirements for OE managing EPC contractor across all disciplines**

This section covers the engineering requirements of the OE in the final design and execution phase for all disciplines.

##### **Construction support**

OE to have oversight of the following:

##### **Pre-Construction**

- Tools and Equipment
- Construction sequence

- Sequence of Events for the construction taking into consideration network constraints, plant and operating constraints, safety, practicality, etc.
- Temporary arrangements (Example: by-passes and temporary connections, if applicable).
- Outages Scheduled
- Construction in close proximity and/or parallel to other services.
- Extension and/or connection of earthing systems connected to live systems.
- Construction Risk assessment of work to be done
- Method statements development/review/acceptance
- Construction Regulations - Requirements and Compliance
- Design Freeze
- **During Construction**
  - Site assurance/investigations/inspections during construction
  - Manage scope creep, design modifications
  - Design intent monitoring and compliance
  - Factory tests and commissioning schedules
- **Post Construction**
  - Checking, correction and completion of As-builds, checklists and test certificates.
  - Post-construction design verifications (as-designed vs as-built)
  - Post-construction design drawing mark-ups
  - Onsite and commissioning tests
  - Takeover and handover

## 7.6 Management of Environmental Requirements During Construction

The OE consultant will have the responsibility to ensure that the EPC contractor constructs the project assets in accordance with legislation, Eskom's environmental requirements and the requirements described in the EA, EMPr, WUL and that all relevant permits are obtained to construct the assets.

## 7.7 Liaison Services

The OE consultant will have the responsibility to provide facilitation and liaison to the EPC contractor when required. This includes:

- Liaison with the arranging of outages,
- Landowner liaison,
- Engineering liaison,
- Grid and operator liaison,
- Stability and stakeholder liaison,

## 7.8 Commissioning Management

The Contractor is to ensure the successful commissioning of an asset in accordance with Eskom specifications and requirements. This process includes activities to be followed throughout pre-commissioning and testing and functional performance verifications to ensure that the plant is fully functional before operation. Verification of functional performance is done to ensure that the system operates as per the design parameters. The Owners Engineer must ensure that all pre-commissioning and testing and all commissioning/energisation of assets are properly planned by the EPC contractor. In addition to the engineering and technical requirements, the Owners Engineer must ensure that the EPC contractor has everything in place for successful commissioning. This includes:

- Plant and material

- Commission resources
- Outages
- Commissioning plan
- Safety plan
- Permit to work
- All documentation as per Tx requirements

## 8 Specification and description of the services

The Consultant shall provide a full suite of services to Eskom Transmission to complement the Tx Network Solutions Development and Execution business

The scope of the services can be subdivided into two main areas:

- Project development necessary to enable the appointment of an EPC contractor and for Execution Release Approval (ERA) for EPC. This may include completion of Basic Design, obtaining all statutory approvals and land rights and developing procurement documents for the EPC.
- Management of the EPC contractor.

The intent of the contract is to provide:

- The full suite of services or a portion thereof to develop projects to enable appointment of an EPC contractor
- The full suite of services or a portion thereof to manage the EPC from appointment to project finalisation

### 8.1 Stage 1 Preparation

The engineering OE scope will involve the following activities:

- Receiving identified projects URSs and CRAs from Eskom's Project Development Department
- Accountable for performing basic design scope
- Performing OE roles in the final design and execution phase, in line with Eskom hold points, being design review, review of specifications, reviewing constructability, executing engineering tasks as per quality hold points, witnessing testing and commissioning, contract management, reporting

The engineering activities OE scope for engineering activities, the OE during basic design and final design/execution phase's stage (for management of the appointed EPC contractor) are further expanded in this document, but not limited to this document.

### 8.2 Stage 2 Concept

Basic design refers to the following, but not limited to, engineering activities associated with the design of power and telecommunications network infrastructure; utilising standard developed products which are typically available on Supply Contracts that Eskom has established with third party vendors.

### 8.3 Stage 3: Design development

As Scope of Work document

### 8.4 Stage 4: Production information

As per Scope of Work document...

### 8.5 Stage 5: Manufacture, Installation and Construction Information:

As per Scope of Work document

### 8.6 Stage 6: Post Practical Completion

As per Scope of Work document

## 9 Constraints on how the Consultant Provides the Services.

### 9.1 Management meetings

The *conditions of contract* Clause 15.2 and other sections of this Scope may require that a meeting be held. However, the intention of all NEC contracts is that the Parties and their agents use the techniques of partnering to manage the contract by holding meetings designed to pro-actively and jointly manage the administration of the contract with the objective of minimising the adverse effects of risks and surprises for both Parties.

Depending on the size and complexity of the *services*, it is probably beneficial for the *Employer's Agent* to hold a weekly risk register meeting (Clause 15.2). This could be used to discuss compensation events, sub consulting, overall co-ordination and other matters of a general nature. Separate meetings for specialist activities such as programming and activities of a technical nature may also be warranted.

Describe here the general meetings and their purpose. Provide particulars of approximate times, days, location, and attendance requirements, stipulating that attendees shall have the necessary delegated authority to make decisions in respect of matters discussed at such meetings. The following text could be used as a model for this section:

Regular meetings of a general nature may be convened and chaired by the *Employer's Agent* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	Weekly on _____ at _____	[•]	[•]
Overall contract progress and feedback	Monthly on _____ at _____	[•]	<i>Employer's Agent</i> , <i>Consultant</i> and [•]_____

Meetings of a specialist nature may be convened as specified elsewhere in this Scope or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *services*. Records of these meetings shall be submitted to the *Employer's Agent* 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.

### 9.2 Consultant's key persons

In addition to clause 22.1, the Consultant's key persons to be indicated on an organogram showing people and their lines of authority / communication.

### 9.3 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 *Consultant* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

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

### 9.4 Documentation control and retention

#### 9.4.1 Identification and communication

All contractual communication will be in the form properly compiled letter, forms attached to emails and as a message in the email itself. All letters must have company overhead. The phone call communication is allowed in



case of emergency; however, it must be followed by written communication. Correspondence on a day-to-day basis may be directed to other parties within the *Employer's* organisation but care must be taken not to violate contract conditions and other provision in terms of the contract

#### **9.4.2 Retention of documents**

The Consultant retains copies of drawings, specifications, reports and other documents which record the services in the form stated in the Scope. the time period for which the Consultant is to retain such documents is the period for retention stated in the Contract Data.

#### **9.4.3 Invoicing and payment**

All invoices shall be supported, where applicable, by a detailed breakdown of the manpower hours, and rates applicable to a Task Order. The Invoice shall be addressed to the Senior Manager: Procurement responsible for the service request.

The Consultant shall address the tax invoice to Eskom Holdings SOC Limited and include on it the following information:

Name and address of the Consultant and the Senior Manager: Procurement.

The contract number and title.

The Purchase order number

Contractor's VAT registration number.

The *Employer's* VAT registration number 4740101508.

Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT

The invoice shall be submitted with the signed off breakdown on manpower costs (Proactive Assurance work)

### **9.5 Contract change management**

- a. If in the judgement of the Consultant, and before actual delivery, certain modifications/alterations are essential for improvement and Plant Safety purposes and such changes do not affect the Prices and the Accepted Programme, the Consultant is obliged to incorporate the said modifications/alteration in the services purchased under this contract with the consent of the Client.
- b. Modifications/alterations that are considered necessary for improvement and Plant Safety purposes, but are likely to affect the Prices and Accepted Programme, are to be recorded by way of an instruction changing the Scope, and are processed in terms of the contract terms and conditions.
- c. The Consultant is obligated, should he develop or become aware of development which may improve the services, which he considers the Client may wish to have incorporated into the services, to advise the Client thereof and supply the Client, to the extent that he is entitled to do so, with all pertinent technical and commercial information, including but not limited to, proposed changes to the Scope, to enable the Client to evaluate the convenience and acceptability of the proposal.

Modifications are proposed by means of notifications and Clients Engineering Change Processes.

### **9.6 Inclusions in the programme**

The Accepted Programme will be agreed between the Client and the Consultant within 4 weeks after contract award.

### **9.7 Quality management**

#### **9.7.1 System requirements**

The Consultant shall exhibit leadership and governance as part of proving their knowledge of quality, by providing documented evidence that they have an effective quality management system in place, one that is an ISO 9001:2015 management system or one that complies with its requirements, through a certified management system and/or management system documentation.

### **9.8 The Parties use of material provided by the Consultant**

#### **9.8.1 Employer's purpose for the material**

The *Employer* has the right to use the material provided by the *Consultant* for the purpose stated in the Scope. The *Consultant* obtains from a Subconsultant equivalent rights for the *Employer* to use material prepared by the Subconsultant.

#### **9.8.2 Restrictions on the Consultant's use of the material for other work**

The *Consultant* may use the material provided by him under this contract for other work unless stated otherwise in the Scope.

#### **9.8.3 Transfer of rights if Option X 9 applies**

The *Employer* owns the Consultant's rights over material prepared for this contract by the Consultant except as stated otherwise in the Scope. The Consultant obtains other rights for the *Employer* as stated in the Scope and obtains from a Subconsultant equivalent rights for the *Employer* over the material prepared by the Subconsultant. The Consultant provides to the *Employer* the documents which transfer these rights to the *Employer*. The Consultant shall not challenge or assist any other party challenging at any time the validity or ownership of any of the intellectual property rights relating to the material created and developed for this contract.

### **9.9 Management of work done by Task Order**

That specific Task Orders for a transaction will be prepared containing the scope of works required.

#### **9.10 Health and safety**

The *Consultant* shall at all times comply with the health and safety requirements prescribed by law as they may apply to the services.

The *Consultant* shall comply with the health and safety requirements contained in the scope of work.

#### **9.11 Cataloguing requirements by the Consultant**

State whether cataloguing will be performed as per Eskom requirements.– Incorporating Cataloguing utilising Unique Identifier 240-1289988974).