



NEC3 Engineering & Construction Contract

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

and

(Reg No.)

**for The Design, Construction, Supply, Commissioning
and Handover of the Electrical Reticulation System
for Grootvlei Climate Smart Horticulture Centre**

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CONTRACT No.

Part C1: Agreements & Contract Data

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C1.1 Form of Offer & Acceptance

Offer

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

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

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

Options A	The offered total of the Prices exclusive of VAT is	
	Sub total	
	Value Added Tax @ 15% is	
	The offered total of the amount due inclusive of VAT is ¹	

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

Signature(s)

Name(s)

Capacity

**For the
tenderer:**

(Insert name and address of organisation)

Name &
signature of
witness

Date

Tenderer's CIDB registration number (if applicable)

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

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Acceptance

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

The terms of the contract, are contained in:

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

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

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

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

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

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

Signature(s)

Name(s)

Capacity

**for the
Employer**

(Insert name and address of organisation)

Name &
signature of
witness

Date

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

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

Note:

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

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

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

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

For the tenderer:

For the *Employer*

Signature

Name

Capacity

On behalf
of

(Insert name and address of organisation)

(Insert name and address of organisation)

Name &
signature
of witness

Date

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

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

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
		A: Priced contract with activity schedule
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	
		X2 Changes in the law
		X7: Delay damages
		X16: Retention
		X17: Low performance damages
		X18: Limitation of liability
		Z: Additional conditions of contract
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The <i>Employer</i> is (Name):	Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa
	Address	Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg
10.1	The <i>Project Manager</i> is: (Name)	
	Address	
	Tel	
	Fax	
	e-mail	
10.1	The <i>Supervisor</i> is: (Name)	
	Address	

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Tel No.

Fax No.

e-mail

11.2(13)	The <i>works</i> are	THE DESIGN, CONSTRUCTION, SUPPLY, COMMISSIONING AND HANDOVER OF THE ELECTRICAL RETICULATION SYSTEM FOR GROOTVLEI CLIMATE SMART HORTICULTURE CENTRE
11.2(14)	The following matters will be included in the Risk Register	<ul style="list-style-type: none"> • Adverse weather Conditions i.e., extreme rain, snow and strong winds. The <i>Contractor</i> needs to take precautions when planning the sequence and resources for the works. Reliable wind speed meters should be acquired and recordings to be kept during periods where work could not be done due to high winds in the area. • Material suppliers. Material suppliers to meet all <i>Employer's</i> requirements. Any disputes between the suppliers and the <i>Contractor</i> will not be handled by <i>Employer</i>. • Injuries and incidents due to noncompliance with Environmental, Health and Safety Regulation and Legislation. • Labour issues. These issues are to be properly managed in the event that local labour is to be hired to limit any disruptions of the work by local residents. • Delayed access to site. • Use of unexperienced resources. • Theft. The site and working areas are to be guarded to ensure that no theft can take place that will affect loss of assets. • Snakes, bees/wasps/spiders and animals – Care should be taken when working in the vicinity and a snake handling procedure should be in place.
11.2(15)	The <i>boundaries of the site</i> are	Witpoort, ERF 563 Portion 21
11.2(16)	The Site Information is in	Part 3: Site Information
11.2(19)	The Works Information is in	Part 3: Scope of Work and all documents and drawings to which it makes reference.
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	1 week

Immediately for safety & health matters

2	The Contractor's main responsibilities	Data required by this section of the core clauses is provided by the <i>Contractor</i> in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.		
3	Time			
11.2(3)	The <i>completion date</i> for the whole of the works is			
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	Condition to be met	key date	
		1	All works to be completed	As per the accepted programme
		2	Project Schedule submission	As per the accepted programme
		3	Safety File	As per the accepted programme
30.1	The <i>access dates</i> are:	Part of the Site	Date	
		1	Witpoort, ERF 563 Portion 21	As per the accepted programme
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	1 week of the Contract Date.		
31.2	The <i>starting date</i> is			
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	Weekly.		
35.1	The <i>Employer</i> is not willing to take over the works before the Completion Date.	As per completion dates		
4	Testing and Defects			
42.2	The <i>defects date</i> is	52 weeks after Completion of the whole of the works.		
43.2	The <i>defect correction period</i> is	2 weeks. The Contractor notifies the Project Manager when the Contractor is unable to correct defects within 2 weeks. The Project Manager instructs the Contractor to submit a revised programme outlining how and when the defects will be corrected. The defects correction period remains 2 weeks until the Project Manager accepts the revised		

programme.

5	Payment	
50.1	The <i>assessment interval</i> is	between the 25th day of each successive month.
51.1	The <i>currency of this contract</i> is the	South African Rand.
51.2	The period within which payments are made is	4 weeks.
51.4	The <i>interest rate</i> is	the publicly quoted prime rate of interest (calculated on a 365 day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands.
6	Compensation events	
60.1(13)	<p>The place where weather is to be recorded is:</p> <p>The <i>weather measurements</i> to be recorded for each calendar month are,</p> <p>The <i>weather measurements</i> are supplied by</p> <p>The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at:</p> <p>and which are available from:</p>	<p>Witpoort, ERF 563 Portion 21</p> <p>the cumulative rainfall (mm)</p> <p>the number of days with rainfall more than 10 mm</p> <p>the number of days with minimum air temperature less than 0 degrees Celsius</p> <p>the number of days with snow lying at 09:00 hours South African Time</p> <p>and these measurements:</p> <p>South African Weather Bureau</p> <p>Based on information recorded at the Heidelberg weather station, the average annual rainfall for the Heidelberg area is approximately 691 mm. (Weather Bureau, Pretoria).</p> <p>the South African Weather Bureau and included in Annexure A to this Contract Data provided by the <i>Employer</i></p>
60.1(13)	Assumed values for the ten year return <i>weather data</i> for each <i>weather measurement</i> for each calendar month are:	As stated in the South African Weather Bureau
7	Title	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	Risks and insurance	

80.1	These are additional <i>Employer's</i> risks	None
9	Termination	<p>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.</p> <p>In addition to core clause 9 termination clause above, the <i>Employer</i> reserves the right to terminate or modify the contract when a need arises or when there are changes requiring such in the organization. Such termination or modification will be subjected to reason for termination, procedure and accounts applicable to the NEC3 ECC core clause 9 termination.</p>
10	Data for main Option clause	
A	Priced contract with activity schedule	
11	Data for Option W1	
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 www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).
W1.2(3)	The <i>Adjudicator nominating body</i> is:	the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body.
W1.4(2)	The <i>tribunal</i> is:	arbitration.
W1.4(5)	<p>The <i>arbitration procedure</i> is</p> <p>The place where arbitration is to be held is</p> <p>The person or organisation who will choose an arbitrator</p> <ul style="list-style-type: none"> - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is 	<p>the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.</p> <p>South Africa</p> <p>the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.</p>
12	Data for secondary Option clauses	
X2	Changes in the law	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.
X7	Delay Damages	
X7.1	Delay damages for late Completion of the	0.1% per day of the price of each delayed

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	works are:	activity	
	Remainder of the works The total delay damages payable by the Contractor does not exceed:	10% of the total of the prices of each delayed activity.	
X16	Retention		
	Remainder of the <i>works</i>	5% of each invoice. 50% to be released on completion and the other 50% will be released after the defects period (52 weeks)	
X17	Low Performance Damages		
X17.1	The amounts for low performance damages are:	Amount R40 000 per day R40 000 per day R 40 000 per day R50 000 per day	Performance level For every incident where a QCP is not approved on time as planned in the accepted programme and delays the start of activities. For every incident of quality non-compliance to hold and witness points on QCP's For every incident where personnel are used which are not qualified or experienced as per the agreement For every incident where a commissioning procedure is not submitted on time as planned in the accepted programme. The amounts for low performance damages shall be capped at 10% of the contract value in aggregate
X18	Limitation of liability		
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	R0.0 (zero Rand) neither party shall have any liability to the other for indirect or inconsequential loss (including loss of profit or loss of income)	
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	the amount of the deductibles relevant to the event.	
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to	The greater of <ul style="list-style-type: none"> the total of the Prices at the Contract Date and the amounts excluded and unrecoverable from the <i>Employer's</i> assets policy for 	

		correcting the Defect (other than the resulting physical damage which is not excluded) plus the applicable deductible as at contract date.
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	<p>the total of the Prices other than for the additional excluded matters.</p> <p>The <i>Contractor's</i> total liability for the additional excluded matters is not limited.</p> <p>The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for</p> <ul style="list-style-type: none"> Defects due to manufacture and fabrication outside the Site, loss of or damage to property (other than the <i>works</i>, Plant and Materials), <ul style="list-style-type: none"> death of or injury to a person and infringement of an intellectual property right.
X18.5	The <i>end of liability date</i> is	A latent Defect is a Defect which would not have been discovered on reasonable inspection by the <i>Employer</i> or the <i>Supervisor</i> before the <i>defects date</i> , without requiring any inspection not ordinarily carried out by the <i>Employer</i> or the <i>Supervisor</i> during that period. If the <i>Employer</i> or the <i>Supervisor</i> do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the <i>Employer</i> or the <i>Supervisor</i> to have discovered the Defect.
Z	The Additional conditions of contract are	Z1 to Z15 always apply.
Z1	Cession delegation and assignment	
Z1.1	The <i>Contractor</i> does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the <i>Employer</i> .	
Z1.2	Notwithstanding the above, the <i>Employer</i> may on written notice to the <i>Contractor</i> cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.	
Z2	Joint ventures	
Z2.1	If the <i>Contractor</i> constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the <i>Employer</i> for the performance of this contract.	
Z2.2	Unless already notified to the <i>Employer</i> , the persons or organisations notify the <i>Project Manager</i> within two weeks of the Contract Date of the key person who has the authority to bind the <i>Contractor</i> on their behalf.	

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- Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

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

- Z3.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor's* B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.
- Z3.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.
- Z3.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor's* obligation to Provide the Works.
- Z3.4 Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

Z4 Confidentiality

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

Z5 Waiver and estoppel: Add to core clause 12.3:

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

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

- Z6.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*:
- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site.
 - warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
 - undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.
- Z6.2 The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

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

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

Z8 Notifying compensation events

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

Z9 Employer's limitation of liability

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

Z10 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet

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point, after the words "against it":

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

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

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

Z12 Ethics

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

Affected Party	means, as the context requires, any party, irrespective of whether it is the <i>Contractor</i> or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,
Coercive Action	means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,
Collusive Action	means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,
Committing Party	means, as the context requires, the <i>Contractor</i> , or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,
Corrupt Action	means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,
Fraudulent Action	means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,
Obstructive Action	means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and
Prohibited Action	means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.

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

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

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

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

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Z13 Insurance

Z 13.1 Replace core clause 84 with the following:

Insurance cover 84

- 84.1** When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.
- 84.2** The *Contractor* provides the insurances stated in the Insurance Table A.
- 84.3** The insurances provide cover for events which are at the *Contractor's* risk from the *starting date* until the earlier of Completion and the date of the termination certificate.

INSURANCE TABLE A

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

Z 13.2

Replace core clause 87 with the following:

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

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INSURANCE TABLE B

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

Z14 Nuclear Liability

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

Z15 Asbestos

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

- AAIA** means approved asbestos inspection authority.
- ACM** means asbestos containing materials.
- AL** means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos

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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.

Ambient Air	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.
Compliance Monitoring	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.
OEL	means occupational exposure limit.
Parallel Measurements	means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.
Safe Levels	means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.
Standard	means the <i>Employer's</i> Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.
SANAS	means the South African National Accreditation System.
TWA	means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

- Z15.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.
- Z15.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor's* expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z15.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.
- Z15.3 The *Employer* manages asbestos and ACM according to the Standard.
- Z15.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented and relevant air monitoring conducted in order to declare the area safe.
- Z15.5 The *Contractor's* personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

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- Z15.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.
- Z15.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer's* expense, and conducted in line with South African legislation.

C1.2 Contract Data

Part two - Data provided by the *Contractor*

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

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job: Responsibilities: Qualifications: Experience:	
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	
11.2(14)	The following matters will be included in the Risk Register	
11.2(19)	The Works Information for the <i>Contractor's</i> design is in:	
31.1	The programme identified in the Contract Data is	
A	Priced contract with activity schedule	
11.2(20)	The activity schedule is in	

11.2(30)	The tendered total of the Prices is	(in figures) (in words), excluding VAT
----------	-------------------------------------	---

PART 2: PRICING DATA

ECC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	2
C2.2	The <i>activity schedule</i>	4

C2.1 Pricing assumptions: Option A

How work is priced and assessed for payment

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

Identified and defined terms 11
11.2 (20) The Activity Schedule is the *activity schedule* unless later changed in accordance with this contract.

(27) The Price for Work Done to Date is the total of the Prices for

- each group of completed activities and
- each completed activity which is not in a group.

A completed activity is one which is without Defects which would either delay or be covered by immediately following work.

(30) The Prices are the lump sum prices for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

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

Function of the Activity Schedule

Clause 54.1 in Option A states: "Information in the Activity Schedule is not Works Information or Site Information". This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Activity Schedule but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Activity Schedule. The Activity Schedule is only a pricing document.

Link to the programme

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

Preparing the *activity schedule*

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


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

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

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

C2.2 the *activity schedule*

Grootvlei Power Station					
Activity schedule					
Provision of electricity for Grootvlei agriculture facility					
Item	Description	Unit	Quantity	Rate	Total Amount
SECTION 1 - PRELIMINARIES AND GENERAL					
1.1	<u>Site Establishment</u>				
1.2	<u>De-establishment</u>				
1.3	<u>Accommodation</u>				
1.4	<u>Health and Safety</u>				
1.5	<u>Travelling Costs</u>				
1.6	<u>Supply of labour</u>				
	Sub-Total				
SECTION 2 - SUPPLY OF MATERIAL AND DELIVERY					
2.0	<u>Section 2 - SUPPLY OF NEW CABLES, CABLE SUPPORT SYSTEMS, CABLE DUCTS AND TRENCHES</u>				
2.1	Cables: 95mm2 x 4core (BVX4PCV) 600/1000V - Supply and deliver to Site cable number tags to use for and including identification of cables as per requirements and colour-coding in Works Information for permanent applications only	m	40		
2.2	Cable racking - Design, supply, transport, delivery of cable trays, racking, ladder racks & accessories, including splicer plates, clamp sets, brackets, bolts, nuts, washers, etc, fixed in all positions, to all heights above working level, and to all areas, cutting and welding to suit, in-situ drilling and welding for fixings. Cable racks/trays are measured along the centreline through fittings which are measured extra over in number				

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2.3	Cold drawn high-tensile steel hot-dipped galvanised (to SANS 957, single spelter) medium-duty ladder rack such as 'O-line CS76' or equal and approved				
2.4	Conduit - Design, supply, transport, delivery of surface-mounted conduit including all ferrules, couplings, brackets, screws, etc. fixed in all positions, to all heights above working level, and to all areas, cutting and threading as required. Measured along centreline through fittings (measured as extra over				
2.5	Wiring channels - Design, supply, transport, delivery of channels including splice sets, brackets, bolts, nuts, washers, etc, fixed in all positions, to all heights above working level, and to all areas, cutting and welding to suit, in-situ drilling and welding for fixings.				
2.6	Supply of new cables - Supply includes the manufacturing and delivery to Site into the Contractor's custody of reeled cable including the drums. Fixing or laying of cable in accordance with SANS 10198 Part 8, includes for all positions on cable racks, droppers, conduits, trunking, ducts, trenches, etc at all heights above working level, and in all areas, including all cable fixings such as saddles, ties, cleats, clips, etc. except trefoil clamps (measured elsewhere), marking and labelling of new cables and testing in accordance with SANS10142-1, recording and updating of cable schedules				
	600/1000V PVC/PVC stranded copper conductor cable, PVC-type flame-retardant outer sheath in accordance with SANS 1507, 1339 & 1411 Parts 1-6 (un-armoured)	m	40		
2.7	400LV BOARD -Design, Supply includes the manufacturing and delivery to Site				
2.8	Generator - Detailed design, and supply of 750KVA generator	No.	1		
SECTION 3 - INSTALLATION AND LABOUR					
3.0	<u>Section 3 - INSTALLATION NEW CABLE SUPPORT SYSTEMS, CABLE DUCTS AND TRENCHES</u>				
3.1	Cables: 95mm ² x 4core (BVX4PCV) 600/1000V - Supply and deliver to Site cable number tags to use for and including identification of cables as per requirements and colour-coding in Works Information for permanent applications only	m	40		
3.2	Cable racking - site installation of cable trays, racking, ladder racks & accessories, including splicer plates, clamp sets, brackets, bolts, nuts, washers, etc, fixed in all positions, to all heights above working level, and to all areas, cutting and welding to suit, in-situ drilling and welding for fixings. Cable racks/trays are measured along the centreline through fittings which are measured extra over in				

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	number				
3.3	Cold drawn high-tensile steel hot-dipped galvanised (to SANS 957, single spelter) medium-duty ladder rack such as 'O-line CS76' or equal and approved				
3.4	Conduit - Site installation of surface-mounted conduit including all ferrules, couplings, brackets, screws, etc. fixed in all positions, to all heights above working level, and to all areas, cutting and threading as required. Measured along centreline through fittings (measured as extra over				
3.5	Wiring channels - Site installation of channels including splice sets, brackets, bolts, nuts, washers, etc. fixed in all positions, to all heights above working level, and to all areas, cutting and welding to suit, in-situ drilling and welding for fixings.				
3.6	Installation of new cables - Supply includes the manufacturing and delivery to Site into the Contractor's custody of reeled cable including the drums. Fixing or laying of cable in accordance with SANS 10198 Part 8, includes for all positions on cable racks, droppers, conduits, trunking, ducts, trenches, etc at all heights above working level, and in all areas, including all cable fixings such as saddles, ties, cleats, clips, etc. except trefoil clamps (measured elsewhere), marking and labelling of new cables and testing in accordance with SANS10142-1, recording and updating of cable schedules				
	600/1000V PVC/PVC stranded copper conductor cable, PVC-type flame-retardant outer sheath in accordance with SANS 1507, 1339 & 1411 Parts 1-6 (un-armoured)	m	40		
3.7	400LV BOARD (Horti Demo Building Board) - Installation and Testing of 400V LV board as per scope of work				
3.8	Generator - Installation of 750KVA generator	No.	1		
	Sub-Total				
SECTION 4 - EARTHING AND LABOUR					
4.0	<u>Section 4 - Earthing: Earth connection to ex earth on racking 2.5 Green/Yellow</u>				
4.1	Earthing: Supply and install green /Yellow pvc stranded Cu 70 mm sq	No.	4		
4.2	Earthing: 50 x 3 mm Flat Cu +saddles	No.	4		

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4.3	Removal: 50 x 3 mm Flat Cu +saddles	No.	4		
4.4	Earthing: 40 x 3 mm Flat Cu +saddles	No.	4		
4.5	Earthing: 25 x 3 mm Flat Cu +saddles	No.	4		
4.6	Removal: 25 x 3 mm Flat Cu +saddles	No.	4		
4.7	Earthing: Terminations, Joints, cross overs, tee's	No.	4		
4.8	Earthing: Earthing 70 mm BCEW	No.	4		
4.9	Earthing: Earthing 16 mm BCEW	No.	4		
4.10	Labour	No.	2		
	Sub-Total				
SECTION 5 - COMMISSIONING					
5.1	Commissioning	Sum	1		
SECTION 6 - HANDOVER DOCUMENTATION					
6.1	Data Pack - Operating and Maintenance Documentation	Copies	2		
	Sub-Total				
	Contract Value				

Notes:

- When pricing for the works, the contractor will be required to submit a breakdown of costs for each activity listed in the activity schedule
- The contractor will be required to submit a shorter schedule of cost components/compensation rates

PART 3: SCOPE OF WORK

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	<i>Employer's Works Information</i>	2-22
Total number of pages		22

C3.1: EMPLOYER'S WORKS INFORMATION

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1. Scope of work

1.1 Description of the works

1.1.1 Executive overview

To mitigate the identified financial and economic impacts of shutting down its Power Stations, Eskom has developed repowering and repurposing strategies, which calls for the establishment of initiatives for diversifying the economy around the stations and providing sustainable alternate economic activities independent of station operations. One of these opportunities for economic diversification is in the agriculture sector. Eskom has partnered with the Embassy of the Kingdom of the Netherlands to establish agriculture around Grootvlei area. The plan is to develop greenhouses and open field agriculture around Grootvlei in a phased approach. The first phase is the combination of Grootvlei climate-smart horticulture (GCSHC) and commercial agriculture facility within a 20ha Eskom vacant land, which has been leased to an independent legal entity (Enterprising African Regional Network Grootvlei Agric (Pty) Ltd) to establish and operate the agriculture facility. The aim of GCSHC is to provide training, applied research and demonstrations for knowledge and for horticulture investors to demonstrate the opportunities in Grootvlei for sustainable horticultural development. The commercial agriculture will be key to the sustainability of the GCSHC and also employment of communities around Grootvlei.

This works information is limited to the supply and installation of electrical reticulation services to the agriculture facility. The identified area for the project needs to be supplied with electrical power. A stepdown transformer will be utilized to obtain power from distribution to power the facility. The transformer will be the property of Grootvlei Power station. A 400V board needs to be installed to provide power to different areas of the facility. The 400V switch gear board will be housed in a switch gear room as per Eskom standards. Diesel Generators serve as a back-up power to the 400V Main Board in the event of total loss of AC supplies to the board. Critical essential loads that are supplied from the 400V Main Board include Greenhouse DB, Park homes and workshop. The above stated system is required to safely operate the facility in the event of power failure, its required to be kept operational till the main AC supply is restored. The Contractor shall comply with the requirements stipulated in the Specification for Diesel Generators (240-62772907), as well as all standards and specifications referenced.

1.1.2 Employer's objectives and purpose of the works

One of the *Employer's* objectives of the works is to provide Electrical power to the agriculture facility project. The *Employer* will also oversee the installation of all the electrical equipment and associated interfacing systems and equipment.

1.1.3 Normative

- [1] ISO 9001 Quality Management Systems.
- [2] OHS Act, Operating Health, and Safety Act No. 85 of 1993

1.1.4 Informative

- [1] 474-12267 Heating Ventilation and Air Conditioning (HVAC) Group Technology Strategic Report 2020 (Rev 1)
- [2] ISO 9001 Quality Management Systems
- [3] 240-53113685: Design Review Procedure
- [4] 240-70164623: Design Guideline for HVAC in the Eskom Coal Fired Power Stations
- [5] 240-56227573: Air-insulated withdrawable AC metal-enclosed switchgear 1kV to 52kV
- [6] 240-56179027: General Safety Measures - Electrical Arc for Switchgear up to 15kV Standard
- [7] 240-56357424: MV and LV Switchgear Protection Standard
- [8] 240-56227516: LV Switchgear Control Gear Assembly Associated Equipment for Voltage 1000V AC and 1500V Standard.
- [9] 240-56227443: Requirements for Control and Power Cables for Power stations Standard
- [10] 240-62772907: Specification Standard for Stationary Diesel Generator Systems

[11] 240-56227589: List of Approved Electronic Devices to be Used on Eskom Power Stations Standard

[12] 240-56176852: Essential Power Supplies for Power Stations Standard

[13] 240-118870219: Standby Power Systems Topology and Autonomy for Eskom Sites

[14] 240-91190310: Sizing of DC Systems for Substation Applications

[15] 240-71432150: Plant Labelling and Equipment Description Standard.

[16] 240-132533107: Generating Unit Electrical Protection Standard - Coal Fired

[17] 240-64636794: Standard for Wiring and Cable Marking in Substations

[18] SANS 61850: Communication networks and systems for power utility automation

[19] 240-56536505: Hazardous Locations Standard

[20] 240-170000103 Lithium Iron Phosphate Batteries Standard

[21] SANS 10142-1, The wiring of premises -Part 1: Low Voltage Installation

[22] 240-56356396, Earthing and Lighting Protection Standard

1.1.5 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AFC	Approved for construction
OBL	Outside battery limits
CIDB	Construction Industry Development Board
ECSA	Engineering Council of South Africa
AC	Alternating Current
DC	Direct Current
HVAC	Heating Ventilation and Air Conditioning
SANS	South African National Standards
V	Volts
GCSHC	Grootvlei Climate Smart Horticulture Centre

2. Management and start up

2.1 Management meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Station SHE Meetings	Monthly & whenever a need arises	Grootvlei Power Station	<i>Employer, Contractor</i>
Risk register and compensation events	Whenever a need arises – to be communicated by either party	Grootvlei Power Station / virtual	<i>Employer, Contractor</i>
Overall contract progress and feedback	Weekly on Wednesdays at 11:00	Grootvlei Power Station / virtual	<i>Employer, Contractor</i>

Early Warning Meetings	Whenever a need arises – to be communicated by either party	Grootvlei Power Station / virtual	<i>Employer, Contractor</i>
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Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the works. Records of these meetings shall be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

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

2.2 Documentation control

All communication between the *Employer* and the *Contractor* shall be via formal letters sent on email.

Upon completion of the works, the *Contractor* shall submit to the *Employer* As built drawings of the works completed. The drawings shall be submitted with a transmittal numbering each drawing as per number sequence provided by the *Employer*. This number sequence will be provided to the *Contractor* once the number of drawings to be submitted has been confirmed.

2.3 Health and safety risk management

The *Contractor* adheres to all OHS Legal requirements, OHS corporate policies, standards and procedures to which Eskom subscribes and as indicated on the issued SHE specification.

The *Contractor*, when coming on site (Grootvlei Agriculture Facility), abides by the Life Saving Rules. These will be provided by the *Employer* on the start of the contract.

The *Contractor* also abides by the Grootvlei High risk Safety, Health, and Environmental Specifications which will also be provided by the *Employer*.

The *Contractor*, when coming on site (Grootvlei Agriculture Facility), makes use of approved personal protective clothing such as overalls, safety shoes, safety hat, dust mask and gloves when necessary.

The *Employer* follows an incident management procedure that includes the investigation of all accidents involving personnel and property. This is done with the intention of introducing control measures to prevent a recurrence of the same incidents. The *Contractor* is expected to fully co-operate to achieve this objective. The *Contractor* will report any incident and accidents to the *Employer* within 24 hours. This report does not relieve the *Contractor* of his legal obligation to report certain incidents to the Department of Labour, or to keep records in terms of the Occupational Health and Safety Act, and Compensation for Occupational Injuries and Diseases Act.

The *Contractor* implements a safety plan and maintains the safety system until the completion of the whole of the works. The plan, will as a minimum, contain PPE information, written safe work procedures, job specific risk assessments, safety meetings, etc. The plan will be to the *Employer's* satisfaction and will be accepted prior to the commencement of any work.

The *Contractor* will be subjected to periodic audits by the *Employer* to ensure compliance with the plan. Any deviations will be corrected to the *Employer's* satisfaction.

The *Employer* has the right to stop the *Contractor's* work activities which, in the opinion of *Project Manager*, is un-safe. The *Contractor* may only continue with work activities when all safety deficiencies have been corrected to the *Employer's* satisfaction. The *Contractor* shall have no claim against the *Employer* in respect of delay due to the above.

2.4 Environmental constraints and management

The *Contractor* must familiarise themselves with the waste management policies and procedures within 14 days from date of contract awards, and must comply with the environmental criteria and constraints stated in the policy document. The requirements include the identification, collection, storage, transportation and disposal of waste. Hazardous waste shall be disposed off in line with the applicable environmental legislation. It is important to note that all spillages must be cleaned immediately and reported to the *Project Manager* as soon as possible. It is the responsibility of the polluter to clean all spillages and for the rehabilitation of the polluted land and the cost associated with that.

2.5 Quality assurance requirements

The *Contractor* implements a quality system and maintains the quality system until the completion of the whole of the Works. The system, will as a minimum, comply with the provisions of the ISO 9001 and the Supplier Contract Quality Requirements Specification. The system will be to the *Employer's* satisfaction and will be accepted prior to the commencement of any work on site.

The *Contractor* is responsible for defining the level of Quality Control Plan (QCP) or inspections to be imposed. The level should be based on criticality of plant and material and must be submitted to the *Project Manager* for acceptance prior to the commencement of any work activities.

The *Contractor* compiles a data package of relevant drawings, test certificates, design checks and other technical information for each section of work which is to be reviewed and signed off by the Supervisor or *Employer's* Representative.

The *Contractor* will be subject to periodic audits by the *Employer* to ensure compliance with the system. Any deviations will be corrected to the *Employer's* satisfaction.

The *Project Manager* has the right to stop the *Contractor's* work activities which, in the opinion of *Project Manager*, does not meet the requirements of the system and will have a detrimental effect on plant performance.

The *Contractor* may only continue with work activities when all deficiencies have been corrected to the *Employer's* satisfaction. The *Contractor* shall have no claim against the *Employer* in respect of delay due to the above.

The *Contractor* ensures that all plant and materials for the Works are to the standard and quality accepted by the *Employer* and ensures that they are suitable for the purpose intended by the manufacturer.

The *Contractor* works according to the *Employer's* standards, specifications, guidelines and procedures. Where no standards, specifications, guidelines and procedures are available, the *Contractor* works according to the *Employer's* Quality Manual. Where possible, standards will be reflected in the contract.

The *Contractor* ensures that they facilitate effective and efficient management of incident from the moment it occurs, until it can be audited and mitigated.

In case the *Contractor* damages the plant whilst executing the scope, the *Contractor* shall rectify the plant and the contract can be terminated thereafter.

2.6 Invoicing and payment

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

The *Contractor* shall address the tax invoice to Eskom Holdings SOC Ltd and include on each invoice the following information:

Name and address of the *Contractor* and the *Project Manager*;

The contract number and title;

Contractor's VAT registration number;

The *Employer's* VAT registration number 4740101508;

Description of service provided for each item invoiced based on the Price List;

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

(add other as required)

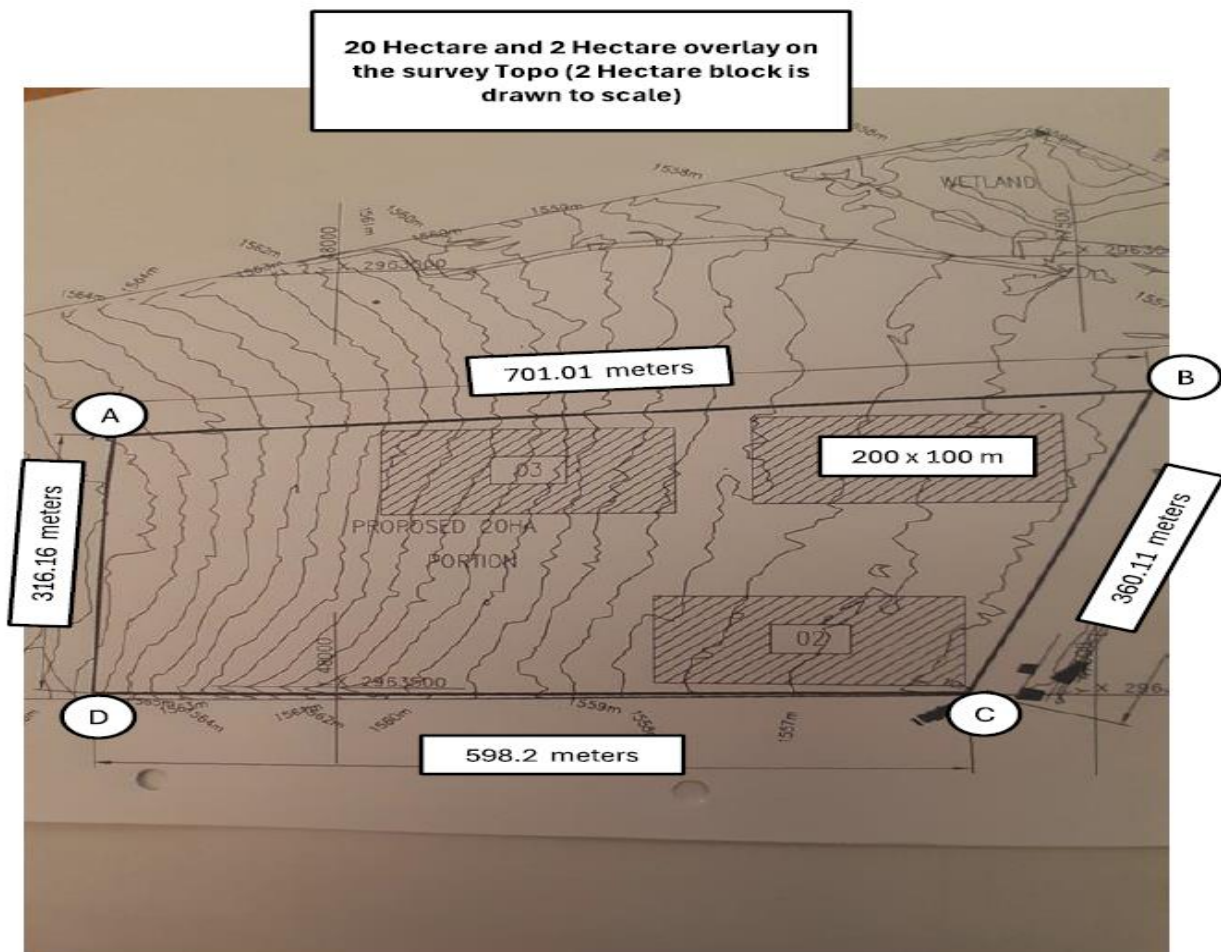
2.7 Insurance provided by the *Employer*

As stated for "Format A" available on

3. Engineering and the *Contractor's* design

3.1 *Employer's* design

Figure 1 below shows the 20ha boundary and 2ha within the 20ha boundary. The *Employer* has not done any designs for the electrical reticulation services required. Therefore, Figure 1 is the only information that the *Employer* provides.



All *Employer's* information and property made available to the *Contractor*, including the works done by the *Contractor* for the *Employer*, is confidential and may not be disclosed to others.

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

The contractor's design is to comprise detailed design package which will be reviewed and approved in accordance with Employer's design review procedure 240-53113685.

The design data specified in this Specification are intended for tendering purposes only. The Contractor is required to take the actual measurements onsite before proceeding with design & manufacture of the complete Works as dimension accuracy remains the responsibility of the Contractor.

The Contractor is to design, produce required drawings and select plant & material which satisfies:

- The overall plant performance and efficiency specification.
- The specified reliability; and keep maintenance costs to a minimum.
- Space constraints.

Contractor produces self-explanatory operating and maintenance manuals suitable for staff training. The Operating and maintenance manuals are to include the following however not limited to:

- Description of Works
- Operation
- Maintenance
- As Built drawings & Commissioning Results

The contract shall execute the following:

- Plant and material acceptance testing
- Testing and commissioning
- Training of operators
- Troubleshooting
- Implementation of an overall quality assurance plan

The Contractor is responsible for the design of certain parts of the works below and that such designs are submitted to the Employer for approval prior to purchase and manufacture of any plant and material.

3.2.1. LV Switchgear Design

The Contractor's Electrical discipline is responsible for the detailed design; plant and material selection; installation and as built drawings; testing, and commissioning documentation; operating instruction and maintenance manuals of the complete LV Switchgear related electrical works.

The Contractor will submit the detail design for the electrical scope for acceptance. Eskom's electrical department to review the designs submitted by the Contractor and sign it off for acceptance.

The Contractor is responsible for the design of the electrical scope and provides the following, as a minimum:

- 700Amp Incomer circuit and control (500 kVA Transformer)
- 100Amp MCCB Feeder circuit (Greenhouse 64.3 kVA)
- 100Amp MCCB Feeder circuit, (Park home 1)
- 100Amp MCCB Feeder circuit, (Park home 2)
- 100Amp MCCB Feeder circuit, (Workshop)
- MCB Feeder circuit (Septic Tank. Use loads provided by EGA or any other septic tank supplier).
- Feeder circuit, (Unequipped cubicle in the DB-main)
- Unequipped cubicle
- Automatic Transfer Switch, ATS (750 kVA diesel standby generator)
- Unequipped cubicle

3.2.2. LV Switchgear System Scope of Works

Cabling

The control and power cabling for the switchgear is provided by the *Contractor*. The core drilling for cables, sealing the cable slots on the new switchgear is the responsibility of the *Contractor*.

The greenhouse *Contractor* provides the cabling from the Greenhouse Board to all associated loads within the greenhouse. The *Contractor* will be responsible for providing and termination of the supply cable from the Main Board 400V board to the Greenhouse Board.

All new cables, racks, joints, and terminations will be designed and installed to operate continuously under the following conditions:

- The voltage ratings, terminations, and joints for MV and LV cables shall be in accordance with 240-56227443 Generation Requirements for Control and Power Cables for Power Stations Standard (Rev 2).
- All cable design requirements regarding fault level, cable thermal rating, voltage drop and details concerning the pulling of, and termination of cables are specified in 240-56227443 Generation Requirements for Control and Power Cables for Power Stations Standard (Rev 2).
- The *Contractor* shall perform a site visit for the design of racks for new cables. All cable racks from the Main board to the Greenhouse board.
- Electrical and instrumentation cables ways will be kept separate, and installation will be done as per ESKOM specification 240-56227443 Generation Requirements for Control and Power Cables for Power Stations Standard (Rev 2).

Cable laying

- The cable laying and segregation shall be in accordance with 240-56227443 Generation Requirements for Control and Power Cables for Power Stations Standard (Rev 2).
- All cable installations that are susceptible to mechanical damage will be armoured with steel wire. The wires must be PVC insulated, with a flame-retardant PVC outer sheath and bedding that emits no more than 15% halogen.
- This cable range shall be round steel wire armoured for burial in ground and for installations where mechanical pressures are expected. It shall be used for control cables (DC: 220 V, AC: 230 V) and power cables (230 V, 400 V AC). The cables must be produced in accordance with SANS 1507 and SANS 1411 Parts 1, 2, & 6.

Testing Requirements

The *Contractor* uses test equipment with valid calibration certificates. The calibration certificates (and new ones as required) are handed over to the *Project Manager* before testing on site starts.

All cable testing shall be in accordance with the requirements stipulated the *Requirements for Control and Power Cables for Power Stations Standard* -240-56227443.

These tests are carried out with an approved Earth Continuity Tester. The tests are carried out in accordance with SANS 10142 – 1. The test results are recorded on a test sheet accepted by the *Project Manager*. The *Engineer* witnesses all tests, with the *Contractor*, records and countersigns the results. Where the earth continuity test results indicate that the earthing is not adequate additional earthing rods must be installed, tested, and connected to the system to obtain results within the requirements of SANS 10142-1.

Earthing

The earthing scope covers the earthing of cables, cable racks, plant equipment and replace visually removed earthing. Earthing tests are done per system. After switching off the system the earthing continuity is tested. These results are handed over to the *Project Manager* for evaluation.

After completion of the cabling and earthing per system the earth continuity is tested before any power is switched on. The test results are handed over to the *Project Manager* for evaluation.

The *Contractor* earths all new equipment and ensures the integrity of the earthing is in accordance with the following:

- 240-56227443: Requirements for Control and Power Cables for Power Stations.

- SANS 10142-1: The wiring for premises Part 1: Low-voltage installations.
- 240-56356396: Earthing and Lightning Protection Standard.

Contractor's Design Documentation to be Submitted for Acceptance

The *Contractor* provides the following for the Electrical Reticulation System:

- All technical details of cables and cable accessories (terminations and joints).
- Cable and accessories type test certificates.
- Cable megger readings.
- Cable test after installation certificate.
- List of all drawings applicable to the *Works*.

Components Acceptance

All active components of the offered equipment that do not form part of the OEM's original design are subject to acceptance by the *Project Manager*. The component complies with the relevant requirements of this Technical Specification as a minimum and shall be components that are supported by OEM for security of spares and technical support.

Where required, the *Contractor* provides calculations to prove the component application, design, and compliance to the requirements. The relevant schematic drawings are used for the acceptance of component application. Should the requirements not meet the component application design requirement, the additional cost is borne by the *Contractor*.

The *Contractor* provides original copies of the technical documentation of each component in a file complete with contents list as well as all calculations or justification per component. The *Contractor* submits two copies of files labelled Components Acceptance Application in this regard.

Design Freeze

After the contract is awarded, the *Contractor* performs Detail Design in accordance with Employer's Works Information. The designs are agreed with the *Project Manager* to achieve Design Freeze status. To achieve Design Freeze, as a minimum; the *Contractor* submits the following design documents to the *Project Manager* for acceptance:

- a) Technical Schedules A and B for the equipment
- b) Compliance Schedules
- c) Engineering Change Register
- d) Single Line Diagrams for switchgear
- e) General Arrangement Drawings
- f) Protection Functional and Interface Block Diagrams
- g) Protection Functional and Interface Block Diagrams
- h) Component Schedules
- i) Technical Manuals
- j) Schematic Diagrams for Protection and Control Systems

The *Employer* will accept the following set of drawings, per board, before any manufacturing can take place:

- a) General arrangement drawings for the switchgear

b) Schematic diagrams for each circuit (this must include all the wire numbers, termination numbers, termination strip numbers, fuse sizes and spare contacts)

c) Component schedule for each circuit on the assembly

For non-standard circuits i.e., incomer, chop-over, the *Contractor* will discuss the requirements with the *Project Manager* and work out a suitable design which the *Contractor* will submit for acceptance. The *Project Manager* accepts the documents to declare the design 'frozen'.

3.2.3. Diesel Generator Design

The Contractor's Electrical discipline is responsible for the detailed design; plant and material selection; installation and as built drawings; testing, and commissioning documentation; operating instruction and maintenance manuals of the complete Diesel Generator related electrical works. The Contractor shall design and build a bund wall for the diesel Generator.

The Contractor will submit the detail design for the electrical scope for acceptance. Eskom's electrical department to review the designs submitted by the Contractor and sign it off for acceptance.

The Contractor is responsible for the design of the electrical scope and provides the following, as a minimum:

- Detail design, manufacturing, construction, factory acceptance testing, transporting, offloading, installation, site acceptance testing and commissioning a new Diesel Generators 400V (750kVA, 1000A). The Diesel Generator must comply with the requirements stipulated in the Specification for Diesel Generators (240-62772907).
- The diesel generators prime mover, alternator, engine management system, diesel generator system protection devices, auxiliaries and monitoring and alarm systems to comply with the technical requirement's stipulated in the Standard 240-62772907,
- The control system shall comply with the requirements of SANS 8528-4 and shall be electrically fail-safe.
- The control system shall be powered from Direct Current (DC) available from the engine cranking batteries.
- The control system shall be capable of operating on an alarm-only basis or alarm and shut down, if so required. It is the Contractor's responsibility to design the control and mimic panel according to Section 3.6.3 of 240-62772907.

Design Acceptance and Type Testing of Diesel Generator Control System

The *Employer* reserves the right to witness any of the tests set out in section 4 of the 240-62772907 standard. The tests specified are a minimum requirement and serves to highlight some of the tests to be performed. For a complete list of tests to be done, please see the Annex B of 240-62772907 standard of for complete checklists.

- The supplier shall be responsible for all tests.
- Test shall be performed and certified in accordance with SANS 8528-6 and this section of the standard.
- As a minimum, the International Organization for Standardization (ISO) standard functional tests (as specified in

a) Type Testing

- The type tests and special tests for Diesel Generator Control System, are carried out on all types of functional units in accordance with section 4 of 240-62772907.
- Type tests shall either be performed after the first unit has been completed, or type test certificates for the offered equipment shall be submitted with the tender documents for evaluation.

- If type test certificates are not available, it is the responsibility of the Contractor to perform these tests at their own cost and supply the relevant type test certificates.
- It is the responsibility of the Contractor to prove compliance with the required specifications in cases where type tests have previously been performed.

b) Insulation Resistance Testing

An insulation resistance test shall be applied to all circuits that do not contain components such as semiconductor devices, electronic modules, and printed-circuit cards. Tests shall be carried in accordance with section 4.3 of 240-62772907

c) Factory acceptance tests

As a minimum, the Factory Acceptance Tests (FATs) shall be carried in accordance to section 4.4 of 240-62772907

d) Site acceptance tests

On completion of the installation, the Site Acceptance Tests (SATs) as stipulated on section 5.5 of 240-62772907 shall be performed as a minimum.

e) Spares holding and availability.

Spares availability shall be guaranteed to be locally available for a period of at least 10 years after delivery within a turn-around time of 48 hours.

3.3 Procedure for Submission and Acceptance of Contactor's Design

The Contractor is the Design Authority for Electrical related works of the contract as defined in the Design Review Procedure 240-53113685. The Contractor is responsible for following this design procedure and conducts all the design reviews as specified in this procedure.

The Contractor is responsible for conducting the following reviews:

- System Integrated Design Review
- Pre- Commissioning Review
- Acceptance Testing Review
- Handover Review

The following process will be followed during submission of documents:

- a) The Contractor submits the documents/drawings to the Employer's representative.
- b) The Employer's Document Controller registers the documents.
- c) The Employer's Document Controller will supply the documents/drawings to all relevant parties within the Employer's project team.
- d) The Employer's project team reviews the documents/drawings and will submit all comments or inputs to the Employer's representative and the Employer's representative submits to the Contractor for consideration.

The contractor shall implement the following activities for approval:

- a) The Contractor reviews, stamps, dates, and signs to signify his approval and submit in the manner required by the Employer in orderly sequence to cause no delay in the work, all Contractor's drawings, equipment selections and/or samples required by the Works or subsequently by the Employer. Contractor's

GROOTVLEI AGRICULTURE FACILITY: PROVISION OF ELECTROMESH ELECTRIC FENCE AROUND 2HA FACILITY AND FREE-STANDING ELECTRIC FENCE AROUND 20HA FACILITY
drawings, equipment selections and samples are to be properly identified as specified or as the Employer may require.

The following documents are supplied to the Employer by the Contractor as a minimum:

a) Documents including equipment data sheets and specification for selected equipment, electrical cabling, and other associated equipment.

3.4 Other Requirements of the Contractor's Design

The Contractor shall comply with all legislated safety requirements as well as Eskom's health and safety standards.

3.5 Design of Equipment

The minimum general equipment design criterion that is to be met is as follows:

- a) The equipment is to be designed to facilitate efficient manufacture, inspection, transportation, installation, maintenance, cleaning, and repairs.
- b) The equipment is to be designed to ensure safe and satisfactory operation for at least 10 years under the conditions prevailing at Grootvlei Power Station in the Mpumalanga Province.
- c) The equipment is to be designed to keep maintenance costs to a minimum.
- d) The equipment is to be designed to comply with all the legal requirements in respect of safety.
- e) The equipment is to be designed to satisfy any specific requirements contained in the relevant statutory codes and standards.
- f) The equipment is to be designed for operation of 365 days per annum, 24hrs per day.

3.6 Equipment Required to be Included in the Works

Special tools for maintenance and testing shall be provided by the Contractor as part of the commissioning phase.

3.7 As-Built Drawings, Operating Manuals and Maintenance Schedules

The importance of managing the "as-built", "operate-to" and the "maintain-to" operation and maintenance manuals including maintenance schedules for each piece of equipment is critical to the life of the plant. The operating & maintenance manuals are to be detailed enough to operate, maintain, adjust, and repair plant & equipment.

3.7.1. As-built Drawings

The Contractor is to provide "As Built" drawings based on the shop drawings embodying all modifications made during construction. The "As Built" drawings are to include general arrangement and sections of all plant and equipment including isometrics and PFD's. The As Built drawing will indicate all relevant plant coding and labelling. The determination of these codes and labels will be done in accordance the documents listed in Works Information.

3.7.2. Operating Manuals and Maintenance schedules

The Operating & Maintenance Manual must describe how the facility is to be operated and by whom, as well as the desired level of training and orientation required for the building occupants.

4. Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

- a. The *Contractor* provides suitable and qualified resources and prioritises candidates around Dipaleseng Community through the local forum where they meet the requirements for the job. The *Contractor* does not employ previously dismissed Eskom employees.
- b. Verifications of skills, qualifications and a police clearance will be conducted on all *Contractor* Employees.
- c. The *Contractor* provides competent personnel with the relevant post qualification experience for the implementation of all of the works. All CVs with relevant qualifications and detailed experience are submitted to the *Project Manager* within four weeks of the start date. All foreign qualifications to be certified by SAQA and proof of certification to be supplied. Foreign ID or passport holders also require a valid work permit to perform work.
- d. The *Contractor* appoints either a Contract Manager or a Project Manager who possesses documented competencies to manage the duties related to the NEC contract and project management. This person serves as the direct liaison for the *Employer's* Project Manager and also has the authority to make decisions and instruct all other *Contractor's* personnel, as and when required.

4.2 Subcontracting

4.2.1 Preferred subcontractors

Where subcontracting of certain activities is required, the *Contractor* notifies the *Employer*, and an agreement shall be obtained with the *Employer* to ensure compliance. Refer to the SDL&I Target Setting document.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

- a. If the *Contractor* subcontracts work, he is responsible for providing the Works as if he had not subcontracted. This contract applies as if a Subcontractor's employees and equipment was the *Contractor's*.
- b. The *Contractor* supports local Small, Micro and Medium Enterprises (SMME) by purchasing equipment, tools and materials locally where such equipment, tools and materials are available.
- c. All Subcontractors need to be approved by the *Project Manager* before the Subcontractor may be allocated work by the *Contractor* or be brought to the Site.
- d. Subcontract documentation and assessment of subcontract tenders shall be done by the *Contractor*.
- e. The *Contractor* informs the *Project Manager* when intending to subcontract some of the works from the contract Scope of Work.
- f. The *Contractor* may subcontract according to NEC contract or other types of contracts.
- g. The *Contractor* submits the proposed contract data for each Subcontractor for acceptance to the Project Manager.
- h. The *Contractor* only employs competent Subcontractors.
- i. The *Contractor* indicates on a list as shown below, the names of any Subcontractors (when known) whose services may be used to provide the works. The *Contractor* provides a short description of the work it is proposed to sub-contract to each, together with an approximate value of the work to be executed by each. Where the Subcontractor is required to do physical work on Site, the *Contractor* provides details of the experiences of the mentioned Subcontractor as well as a list of references involving work of a similar nature.
- j. Notwithstanding the inclusion of a Subcontractor name below, the *Contractor* obtains the written acceptance of the *Project Manager* prior to the employment of such Subcontractor.

Subcontractor	Description of work	Approximate value
1.		
2.		
3.		

4.2.3 Limitations on subcontracting

Where the *Contractor* encounters scenarios where specialised work is required, subcontracting of such services is to be obtained in agreement with the *Employer*.

4.2.4 Attendance on subcontractors

- Subcontractors remain the responsibility of the main *Contractor*. They adhere to the *Employer's* code of ethics and comply with all the *Employer's* requirements.
- It is the *Contractor's* responsibility to ensure that the Subcontractor(s) completes and supplies a daily Site diary, which includes details such as the labour resources available, starting time, ending time, equipment and materials used, weather conditions, interruptions etc.
- The *Contractor* ensures that the diary is submitted by the Subcontractor to the *Project Manager* daily for checking, commenting and signing off and a copy is supplied. If the daily diary is not signed off by each worker, then a separate daily attendance register is supplied.

4.3 Plant and Materials

4.3.1 Quality

- The *Contractor* ensures that all equipment, tools and material that the *Contractor* / Subcontractor uses to execute the works, complies with the SABS and other stated standards.
- All plant and materials sourced and supplied for the installation are new and all are free from defects. Reconditioned/refurbished plant and/or materials are NOT regarded as new under any circumstances and may NOT be utilised.
- The *Contractor* does not use plant and materials, which are generally recognised as being unsuitable or otherwise unsuitable for the purpose for which they are intended.
- Only components of high reliability are utilised, with a proven operating history, to enable the plant to achieve the required reliability and availability. Plant and material design, engineering and manufacturing are in accordance with the best practice applicable to high-grade products of the type to be furnished, to ensure the efficiency and reliability of the works and the strength and suitability of the various parts for the works.
- Plant and materials withstand ambient conditions and the variations of temperature arising under working conditions without distortion, deterioration or undue strains in any part.
- No repair of defective plant and materials may be permitted without the *Project Manager's* approval and any such repair, if approved, is carried out to the satisfaction of the *Employer*.
- The *Project Manager* is free to specify hold and witness points during the installation and on-site testing stages of the project. The *Contractor* issues preliminary notification of such hold and witness points by fifteen working days advance notice to the *Project Manager* and confirms such hold and witness points at least seven working days prior to the activity.

Typical hold points are listed below:

- Design Review
- Factory Acceptance Test
- Delivery to Site
- Site Acceptance Test
- All manuals and drawings (in the specified format)
- Commissioning

4.3.2 Plant & Materials provided "free issue" by the *Employer*

No free issue plant and materials by the *Employer*. All other plant and material are provided by the *Contractor*.

4.3.3 Contractor's procurement of Plant and Materials

- a) It is mandatory that plant, equipment and materials be procured in accordance with the specifications listed in the Works Information.
- b) Should any equipment not be available on the market due to obsolescence, the *Contractor* recommends a suitable alternative. All alternative equipment to be approved by the *Employer* before procurement.
- c) The *Contractor* only procures plant and materials as specified in the Works Information. Any change of specifications is notified in writing by the *Project Manager* as an instruction.
- d) The procurement schedule is clearly shown and integrated into the *Contractor's* accepted project programme ensuring delivery of equipment to site in advance to the installation activity.
- e) All items procured and stored at the *Contractor's* premises or the *Employer's* premises are stored in accordance with the manufacturer's or material's specifications.
- f) The *Contractor* ensures that plant and materials procured carry a minimum of 52 weeks warranty or guarantee period due to defect or malfunction.
- g) Plant and materials used for the works are to bear no labelling other than the plant coding specified by the *Employer*.
- h) The *Contractor* procures and stores all materials as per the recommendations stipulated in the materials data sheet.

4.3.4 Spares and consumables

- a) The *Contractor* provides required spares and consumables that may be needed at or just after take over to ensure continuity.
- b) The *Contractor* provides consumables for all *Contractor's* employees, that is, gloves, dust masks, earplugs.

4.4 Tests and inspections before delivery

- a. The *Project Manager* reserves the right to appoint a representative or representatives to inspect all parts during manufacturing and testing and to be present at any of the tests specified in this works.
- b. The *Employer's* representative/s and/or third-party/independent inspection authority must have unhindered access to witnessing all manufacturing and testing processes at the manufacturing facility.
- c. Where holding points exist on the manufacturing QCP's, no manufacturing activity shall proceed if the preceding activity on the manufacturing QCP was not approved by both the *Contractor* and *Employer's* representatives.
- d. The *Employer* carries out quality inspections at his discretion and as per the pre-approved Quality Control Plan (QCP). The *Employer* will inspect and approve stages of manufacture of all equipment necessary to ensure the correct quality of equipment as prescribed in the approved project quality plan. All inspections and testing to be performed in accordance with the Quality Control Procedure (QCP) developed by the *Contractor* after approval by the *Employer*. The *Contractor* must provide facilities for inspection of all items of equipment at the place of the manufacture and this requirement must extend to all Sub-contractors and suppliers. The *Employer* reserves the right to reject items that do not conform to the *Employer's* requirements. The following tests are conducted by the *Contractor* and are to be witnessed by the *Employer* at the manufacturer's works or *Contractor's* premises for both the LV switchgear design and Diesel Generator Design as a minimum requirement:
 - a) Visual inspection of the equipment

- b) Review of the certification requirements
- c) Functional tests of the systems
- d) Verification that components installed is correct.
- e) Verification that all labels are correct.

The functional tests form part of the Factory Acceptance Test (FAT) supporting documents shall be submitted testament to the fact that the design was tested and meets all criteria set out in the technical evaluation. The site integration test is to include the checking of all lux levels as measured from a specified platform. A Site Acceptance Test (SAT) shall be completed at the end of the project and shall include a full testing on the installation during the commissioning to ensure compliance to all relevant standards.

- e. Such tests as may be required by the *Project Manager* are carried out by the *Contractor* during or after manufacturing to prove compliance with the specification independently of any test which may have been carried out at the manufacturer's facility.
- f. The *Contractor* is not relieved of his responsibilities if the *Project Manager* and other *Employer* representatives choose to waive the witnessing of any manufacturing and testing processes.
- g. The *Contractor* provides a test certificate for each test required.
- h. The *Contractor* provides current calibration certificates for all equipment used during manufacturing and testing when required to do so by the *Project Manager*.
- i. The *Contractor* is responsible for quality assurance and control during manufacturing and testing. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the *Employer* (including the absence of disapproval) shall not relieve the *Contractor* from any responsibility under the *Contract*, including responsibility for errors, omissions, discrepancies and non-compliances.
- j. The *Contractor* takes note of and responds to any comments made by the *Employer* on the *Contractor's* manufacturing documents. However, the *Employer* is not bound to check the *Contractor's* manufacturing documents for any errors, omissions, ambiguities or discrepancies or compliance with the requirements of the Works Information. The *Employer's* receipt of, or review of, or comment on, the *Contractor's* manufacturing documents does not relieve the *Contractor* from responsibility for the *Contractor's* errors or omissions or departure from the requirements of the standard.
- k. The *Contractor* tests, inspects and certifies that the system is reliable and safe to use before takeover.
- l. The *Contractor* provides all test certificates of compliance (CoC).

The *Employer* carries out quality inspections at own discretion.

4.5 Marking Plant and Materials outside the Working Areas

Grootvlei Power Station uses the KKS numbering system which is based on the latest revision of 240-93576498 KKS Coding standard.

Since this project is focus on the new area where there are no KKS for that area, the new codes that will be required for plant identification will be high.

For the areas where new codes will be required, plant codification will be conducted internally by the Grootvlei Design and Specification department. Therefore, it is critical that the design documentation be of such quality that the KKS codes can be prepared timeously.

4.6 Contractor's Equipment (including temporary works)

- a. The *Contractor* uses inspected and tested equipment, and equipment compliance documents are made available on request by the *Employer*.
- b. The *Contractor* removes all temporary works after completion.

4.7 Cataloguing requirements by the Contractor

The *Contractor* provides all the information (specification) required by the *Employer* to catalogue the spares for this system.

4.8 Implementation Phase

Once the design has been submitted and approved by Eskom SCCC (Site Change Control Committee), the implementation phase can commence.

4.8.1 Completion, Testing, Commissioning and Correction of Faults

The contract is deemed to be complete when the following have been completed in accordance with the relevant specifications:

- a) The Plant is erected and commissioned.
- b) Signed erection and safety clearance certificates.
- c) The final drawings have been submitted.
- d) All documentation has been submitted including testing reports and the associated certificates received. All Quality Control Plan (QCP) documentation received. Final Draft of the Technical, Operating, Maintenance manuals delivered.
- f) All special tools have been supplied.

4.9. Plant And Material Standards and Workmanship

The design data specified in this Works Information is intended for tendering purposes only. The Contractor is required to take the actual measurements onsite before proceeding with design & manufacture of the LV Switchgear design and Diesel Generator Works as dimension accuracy remains the responsibility of the contractor.

5 Construction

5.1 Temporary works, Site services & construction constraints

5.1.1 Employer's Site entry and security control, permits, and Site regulations

The *Contractor* gains site entry once:

- a) The Medicals have been confirmed valid for all the *Contractor's* employees.
- b) All the *Contractor's* employees have completed the Site Inductions (Held on Mondays and Wednesdays).
- c) All the *Contractor's* employees provide a Security Clearance

5.1.2 Restrictions to access on Site, roads, walkways and barricades

Access to Site

The *Contractor* makes his/her own assessment of, and allows in his/her rates for those access problems that may be encountered. No extra payment or claim of any kind is allowed on account of difficulties of access to the works, or for the requirement of working adjacent to or in the same area as others.

Access to site is in line with the *Employer's* access procedure. The *Contractor* is required to make an application to enter site for the duration of the contract, including the warranty and defect period where

GROOTVLEI AGRICULTURE FACILITY: PROVISION OF ELECTROMESH ELECTRIC FENCE AROUND 2HA FACILITY AND FREE-STANDING ELECTRIC FENCE AROUND 20HA FACILITY
applicable. A permit is only be issued once the *Contractor* and his or her employees have attended the safety induction and has undergone medical checks.

All the assets must be declared and registered with security upon entering site. This includes portable assets such as laptops. The record must be kept on the OV18 form. No asset shall be removed from site if the OV18 form is not attached.

The *Contractor* has no claim against the *Employer* in respect of delay at the security gate.

All *Contractor* permits is returned to Protective Services on completion of the works.

Equipment

Any equipment, or appliances, used by the *Contractor* conforms to the applicable OHS Act safety standards and is maintained in a safe and proper working condition. The *Employer's Agent* has the right to stop the *Contractor's* use of any equipment which, in the opinion of *Employer's Agent*, does not conform to the foregoing.

Off-loading and material handling equipment is not available on site and if required, is to be provided by the *Contractor*.

Site Regulations

Note that the speed limit on the site for construction vehicles is 30 km/h and 40km/h for light vehicles. The vehicle permit of any persons contravening any traffic act on site shall be cancelled.

The *Contractor* complies with the Grootvlei Site Regulations, a copy of which is available for perusal at the *Employer's Agent* offices.

Any subject within the authority of the *Employer's Agent* may be addressed by a Site Regulation. Before work starts on site, an inaugural meeting is held with the *Contractor* and the *Employer's Agent* to explain all requirements of the Site Regulations.

The *Contractor* is issued with a file of current Site Regulations on arrival. The file remains the property of the *Employer's Agent* and the *Contractor* is responsible for its maintenance and updating as revised regulations are issued by the *Employer's Agent*.

Permits

The *Contractor* applies for all Construction Work permits with the Department of Labour as per requirements of the Occupational Health and Safety Act 85 of 1993.

Accommodation and Transportation

At his own cost the *Contractor* provides his/her own accommodation and transport for all his/her employees engaged in the execution of the works. This includes the needs of his/her subcontractor.

Security

The *Contractor* provides security necessary for the protection of the works at all times until the completion of the whole of the works.

The *Contractor* is informed of the access procedures through Site Regulations and note that such procedures may change depending on the prevailing security situation.

All persons entering the Grootvlei site pass through the control points at the main access gate and are required to have temporary permits that are issued to *Contractor* staff on request. All persons submit ID documents with the application for temporary permits. If it is necessary to bring equipment onto site a list is submitted which is verified by security staff prior to equipment entering the security area.

If any *Contractor's* employees are transferred from Grootvlei or leave site, the person's permit is handed over to the Supervisor. The *Contractor* ensures that personnel leaving site are transported out of the security area and that the permit is returned.

No firearms, weapons, alcohol, illegal substances and cameras are permitted on site. Any person suspected of being under the influence of alcohol is tested and if proved positive, is refused entry to the security area.

No "private work" is carried out for or on behalf of any Eskom employee.

Safety

The *Contractor* implements a safety plan and maintains the safety system until the completion of the whole of the works. The plan, will as a minimum, contain PPE information, written safe working procedures, job specific risk assessments, safety meetings, etc. The plan is to the *Employer's* satisfaction and is accepted prior to the commencement of any work.

The *Contractor* is subjected to periodic audits by the *Employer* in order to ensure compliance with the plan. Any deviations are corrected to the *Employer's* satisfaction.

The *Employer's* Agent has the right to stop the *Contractor's* work activities which, in the opinion of *Employer's* Agent, is un-safe. The *Contractor* may only continue with work activities when all safety deficiencies have been corrected to the *Employer's* Agent satisfaction. The *Contractor* shall have no claim against the *Employer* in respect of delay due to the above.

Site	:	Witpoort, ERF 563 Portion 21
Regional Authority	:	Dipaliseng Town Council, Mpumalanga Province
Nearest Towns	:	Balfour – 18km north east of power station Villiers – 30km south of power station Heidelberg – 40km north of power station There are informal settlements within a 10 km radius of the power station.
Infrastructure	:	Witpoort, ERF 563 Portion 21 is situated approximately 10km from the N3 highway and is connected to it by means of a tarred road. There is also a secondary tarred road connecting the site with the R51 and R53.. There is also a railway line from Balfour to Bethlehem next to the agriculture hub.
Landowner	:	The agriculture hub is situated in Witpoort, ERF 563 Portion 21. Eskom is the landowner of the land.
River catchment	:	Mid-Vaal
Regional Climate	:	Witpoort, ERF 563 Portion 21 is situated on the Highveld in the western part of Mpumalanga province on the escarpment, at an average height of 1551 m above sea level. The winters are generally dry and cold with regular frost and temperatures varying between -7°C and 23°C. The summers are mild with most of the rainfall occurring during this season. Temperatures vary between 12° & 32° C.
Wind direction	:	Data from the Heidelberg weather station shows that Grootvlei Power Station is sited in such a way that for most of the year (291 days) the wind direction is from the power station in a direction that is North West.

Rainfall

Based on information recorded at the Heidelberg weather station, the average annual rainfall for the Heidelberg area is approximately 691 mm. (Weather Bureau, Pretoria).

People restrictions on Site; hours of work, conduct and records

The *Contractor* records information of all those that enter the *Employer's* site on each site. This information is to be presented to the *Employer's* Agent on the day of the site visit and as and when requested by the Employers Agent.

Working hours at Grootvlei Power Station are as follows:

07:00 to 19:00 and 19:00 to 07:00 every day (where applicable / necessary different time slots can be arranged and agreed upon by both parties).

Site services and facilities

The site is a greenfield site. The *Employer* will make provision for potable water. There are no ablutions and there is no power onsite currently.

Facilities provided by the *Contractor*

The *Contractor* provides all facilities and equipment as quoted for in his site establishment for the successful and efficient execution of the works. The *Employer* allocates a site for the *Contractor* to establish. Upon completion of the works, the *Contractor* de-establishes site and removes all the facilities and equipment previously brought to site.

Access given by the *Employer* for correction of Defects

Access will be provided to the Contractor for defects correction.

List of drawings

5.3 Drawings issued by the *Employer*

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

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

Drawing number	Revision	Title