



NEC3 Engineering & Construction Contract

Subcontract (ECS3)

Between Eskom Rotek Industries SOC Limited
Reg. No: 1990006897/30

and
Reg No:

**for Erection and Installation of Electrical, Auxiliary
Power and C&I Trunk Cable for Units 2 to 6 including
Common Plant for the Kusile Power Station -
Package 20A**

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Contract No:

**Documentation
prepared by:**

Eskom Rotek Industries SOC Limited Procurement
Heritage Office Park
Lower Germiston Road
Rosherville
Johan Botha
Tel: 082 446 4601
Email: BothaJD@eskom.co.za

Part C1: Agreements & Subcontract Data

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C1.1 Form of Offer & Acceptance

Offer

The *Contractor*, identified in the Acceptance page signature block on the next page, has solicited offers to enter into a subcontract for the procurement of:

Subcontract - Erection and Installation of Electrical, Auxiliary Power and C&I Trunk Cable for Units 2 to 6 including Common Plant for the Kusile Power Station - Package 20A

The tenderer, identified in the signature block below, having examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, 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 *Subcontractor* under the Subcontract 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 subcontract identified in the Subcontract Data.

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

This Offer may be accepted by the *Contractor* by signing the form of Acceptance overleaf 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 *Subcontractor* in the conditions of subcontract identified in the Subcontract Data.

Signature(s)

Name(s)

Capacity

**For the
tenderer:**

Name &
signature of
witness

Date

Tender's CIDB Registration Number and Grading

Number:

Grading:

Acceptance

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

The terms of the Subcontract, are contained in:

Part 1 Agreements and Contract Data, (which includes this Form of Offer and Acceptance)

Part 2 Pricing Data

Part 3 Scope of Work: *Subcontractor* Works Information

Part 4 Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts. The above listed documents shall for the purposes of interpretation follow the manner and order in which they are listed and comprise the entire agreement between the Parties and supersede any prior oral or written agreement or understanding between them relating to the contract

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 changes to the terms of the Offer agreed by the tenderer and the *Contractor* 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, which must be signed by the duly authorised representative(s) for both Parties.

The tenderer shall within one week of receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the *Contractor* 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 subcontract identified in the Subcontract 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 copy of this document, including the Schedule of Deviations (if any). Unless the tenderer (now *Subcontractor*) within five days of the date of such receipt notifies the *Contractor* in writing of any reason why he cannot accept the contents of this Form of Offer and Acceptance, this Agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

for the
Contractor

Eskom Rotek Industries SOC Limited

Name &
signature of
witness

Date

Schedule of Deviations

No.	Subject	Details
1	COVID-19 - Regulations	Actual proven cost
2		
3		
4		
5		
6		
7		

By the duly authorised representatives signing this Schedule of Deviations below, the *Contractor* 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 *Contractor* 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 Subcontractor:	For the Contractor:
Signature	_____	_____
Name	_____	_____
Capacity	_____	_____
On behalf of	Eskom RoteK Industries SOC Limited
Name & signature of witness	_____	_____
Date	_____	_____

C1.2a ESC3 Subcontract Data

Part one - Data provided by the *Contractor*

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

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	B: Priced contract with bill of quantities
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	X1: Price Adjustment for inflation
		X2 Changes in the law
		X7: Delay damages
		Z: Additional conditions of Subcontract
	of the NEC3 Engineering and Construction Sub contract, April 2013 (ECS3)	
10.1	The <i>Contractor</i> is	Eskom Rotek Industries SOC Ltd (Reg no: 1990/006897/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa
	Address	Roshland Office Park Lower Germiston Road Rosherville
	Represented by:	Stephan Bester
	Address	Kusile Power Station
10.1	The <i>Employer</i> in the main contract is:	Eskom Holdings SOC Ltd (reg no: 20021015527130), 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>Supervisor</i> in the main contract is:	Stephan Bester
	Address	Kusile Power Station
	Tel No.	079 894 5447

e-mail

BesterSt@eskom.co.za

11.2(13)	The Subcontract <i>works</i> are	Erection and Installation of Electrical, Auxiliary Power and C&I Trunk Cable for Units 2 to 6 including Common Plant for the Kusile Power Station	
11.2(14)	The following matters will be included in the Risk Register	1. Access to working area 2. Equipment availability 3. Engineering details and cable schedule 4. COVID-19	
11.2(15)	The <i>boundaries of the site</i> are	Kusile Power Station	
11.2(16)	The Site Information is in	Part 4: Site Information	
11.2(19)	The Subcontract Works Information is in	Part 3: Scope of Work and all documents 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	5 days	
2	The Subcontractor's main responsibilities	Data required by this section of the core clauses is provided by the <i>Subcontractor</i> in Part 2 and terms in italics used in this section are identified elsewhere in this Subcontract Data.	
3	Time		
11.2(3)	The Subcontract <i>completion date</i> for the whole of the Subcontract <i>works</i> is	
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	Condition to be met As per the baseline schedule	key date As per the baseline schedule
30.1	The Subcontract <i>access dates</i> are:	Part of the Site 1	Date As per the baseline schedule
31.1	The <i>Subcontractor</i> is to submit a first programme for acceptance within	Baseline programme to be accepted and adopted.	
31.2	The subcontract <i>starting date</i> is	
32.2	The <i>Subcontractor</i> submits revised programmes at intervals no longer than	
4	Testing and Defects		
42.2	The <i>defects date</i> is	52 weeks after handover	
43.2	The <i>defect correction period</i> is	1 week	

45.1	The costs for correcting defects	Will be for the <i>Subcontractor's</i> account
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5 Payment

50.1	The <i>assessment interval</i> is	25 th day of each successive month.
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51.1	The <i>currency of this contract</i> is the	South African Rand.
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51.2	The period within which payments are made is	30 days after invoice date
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51.4	The <i>interest rate</i> is	Interest rate from Standard Bank South Africa
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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>Kusile Power Station</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>Eskom Rotek Industries- Environmental Officer</p> <p>Kusile Power Station</p> <p>the South African Weather Bureau and included in Annexure A to this Subcontract Data provided by the Contractor</p>
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8 Risks and insurance

80.1	These are additional <i>Employer's</i> risks	<ol style="list-style-type: none"> 1. Access to working area 2. Equipment availability 3. Engineering details and cable schedule 4. COVID-19
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84.1	The <i>Subcontractor</i> provides these insurances from the Insurance Table	See notes in Annexure B
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84.2	<p>The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the <i>works</i>, Plant, 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 for</p>	<p>whatever the <i>Subcontractor</i> deems necessary in addition to that provided by the <i>Employer</i>.</p>
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any one event is

84.2	The minimum limit of indemnity for insurance in respect of 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 for any one event is	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Subcontractor's</i> common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands).
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10	Data for main Option clauses	
11	Dispute resolution – Option W1	
W1.1	The Adjudicator in this Subcontract 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 Adjudicator nominating body is:	the Chairman of ICE-SA, a Division of the South African Institution of Civil Engineering, or its successor body (See www.ice-sa.org.za)
W1.4(2)	The tribunal is:	Arbitration
W1.4(5)	The arbitration procedure is	the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
W1.4(5)	The place where arbitration is to be held is	South Africa
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.
12	Data for secondary Option clauses	
X1	Price Adjustment for inflation	
X1.1 (a)	The base date is
X1.1 (b)	The Price Adjustment factors are	Refer to C2.1 Pricing Assumptions
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 Completion of the whole of the <i>works</i> are
X18	Limitation of liability	
X18.1	The <i>Subcontractor's</i> liability to the	R 0-00 (Zero Rand)

	<i>Contractor</i> for indirect or consequential loss is limited to:	
X18.2	For any one event, the Subcontractor's liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> or Contractor's property is limited to:	<p>the amount of the deductibles relevant to the event described in the insurance policy format selected in the data for clause 84.1 above, which policy is available on http://www.eskom.co.za/live/content.php?Item_ID=9248</p>
X18.3	The Subcontractor's liability for Defects due to his design which are not listed on the Defects Certificate is limited to	<p>The greater of</p> <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 R15M first amount payable in terms of the <i>Employer's</i> assets policy.
X18.4	The <i>Subcontractor'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>Subcontractor'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 his design which arise before the Defects Certificate is issued, Defects due to manufacture and fabrication outside the Site, loss of or damage to property (other than the <i>works</i>, Plant and Materials), death of or injury to a person and infringement of an intellectual property right.
X18.5	The <i>end of liability date</i> is	<p>(i) one years after the <i>defects date</i> for latent Defects and</p> <p>(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.</p> <p>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</p>

	responsibility on the <i>Employer</i> or the <i>Supervisor</i> to have discovered the Defect.
Z	The <i>Additional conditions of Subcontract</i> are
Z1	Cession delegation and assignment
Z1.1	The Subcontractor does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the <i>Contractor</i> .
Z1.2	Notwithstanding the above, the <i>Contractor</i> may on written notice to the <i>Subcontractor</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 and the Electricity Distribution Industry.
Z2	Joint ventures
Z2.1	If the <i>Subcontractor</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>Contractor</i> for the performance of this contract.
Z2.2	Unless already notified to the <i>Contractor</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>Subcontractor</i> on their behalf.
Z2.3	The <i>Subcontractor</i> does not substantially alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the <i>Contractor</i> having been given to the <i>Subcontractor</i> in writing.
Z3	Change of Broad Based Black Economic Empowerment (B-BBEE) status
Z3.1	Where a change in the <i>Subcontractor's</i> legal status, ownership or any other change to his business composition or business dealings results in a change to the <i>Subcontractor's</i> B-BBEE status, the <i>Subcontractor</i> notifies the <i>Contractor</i> within seven days of the change.
Z3.2	The <i>Subcontractor</i> is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the <i>Project Manager</i> within thirty days of the notification or as otherwise instructed by the <i>Project Manager</i> .
Z3.3	Where, as a result, the <i>Subcontractor's</i> B-BBEE status has decreased since the Contract Date the <i>Contractor</i> may either re-negotiate this contract or alternatively, terminate the <i>Subcontractor's</i> obligation to Provide the Works.
Z3.4	Failure by the <i>Subcontractor</i> to notify the <i>Contractor</i> of a change in its B-BBEE status may constitute a reason for termination. If the <i>Contractor</i> terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.
Z4	Ethics
Z4.1	Any offer, payment, consideration, or benefit of any kind made by the <i>Subcontractor</i> , which constitutes or could be construed either directly or indirectly as an illegal or corrupt practice, as an inducement or reward for the award or in execution of this contract constitutes grounds for terminating the <i>Subcontractor's</i> obligation to Provide the Works or taking any other action as appropriate against the <i>Subcontractor</i> (including civil or criminal action).
Z4.2	The <i>Contractor</i> may terminate the <i>Subcontractor's</i> obligation to Provide the Works if the <i>Subcontractor</i> (or any member of the <i>Subcontractor</i> where the <i>Subcontractor</i> constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations) is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices.

Such practices include making of offers, payments, considerations, or benefits of any kind or otherwise, whether in connection with any procurement process or contract with the *Contractor* or other people or organisations and including in circumstances where the *Subcontractor* or any such member is removed from the an approved vendor data base of the *Contractor* as a consequence of such practice.

- Z4.3 Notwithstanding the provisions of core clause 90.2, the procedures on termination in terms of this clause are P1, P2 and P3 as stated in the core clause 92 and the amount due is A1 and A3 as stated in core clause 93.

Z5 Confidentiality

- Z5.1 The *Subcontractor* 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 *Subcontractor*, enters the public domain or to information which was already in the possession of the *Subcontractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Subcontractor* disclose information to Others in terms of clause 25.1, the *Subcontractor* ensures that the provisions of this clause are complied with by the recipient.
- Z5.2 If the *Subcontractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Project Manager*.
- Z5.3 In the event that the *Subcontractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Subcontractor*, to the extent permitted by law prior to disclosure, notifies the *Contractor* 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 *Subcontractor* 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.
- Z5.4 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 *Contractor*.
- Z5.5 The *Subcontractor* ensures that all his Subcontractors abide by the undertakings in this clause.

Z6 Waiver and estoppel: Add to core clause 12.3:

- Z6.1 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.

Z7 Health, safety and the environment: Add to core clause 27.4

- Z7.1 The *Subcontractor* 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 *Subcontractor*:
- accepts that the *Contractor* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2003 (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 *Subcontractor's* direction and control, likewise observe and comply with the foregoing.

- Z7.2 The *Subcontractor*, 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 *Subcontractor's* direction and control, likewise observe and comply with the foregoing.

Z8 Provision of a Tax Invoice and interest. Add to core clause 51

- Z8.1 Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Subcontractor* provides the *Contractor* with a tax invoice in accordance with the *Contractor's* procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.
- Z8.2 If the *Subcontractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Contractor* 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 *Contractor* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.
- Z8.3 The *Subcontractor* (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 *Contractor's* VAT number 4740101508 on each invoice he submits for payment.

Z9 Notifying compensation events

- Z9.1 Delete from the last sentence in core clause 61.3, "unless the *Project Manager* should have notified the event to the *Subcontractor* but did not".

Z10 Employer's limitation of liability

- Z10.1 The *Contractor's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)
- Z10.2 The *Subcontractor's* entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Contractor's* liability under the indemnity is limited to compensation as provided for under the compensation events stated in this contract.

Z11 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":

- Z11.1 or had a judicial management order granted against it.

Z12 Addition to secondary Option X7 Delay damages (if applicable in this contract)

- Z12.1 If the amount due for the *Subcontractor's* payment of delay damages reaches the limits stated in this Contract Data for Option X7 or Options X5 and X7 used together, the *Contractor* may terminate the *Subcontractor'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.

Z13 Local Manufacture

- Z13.1 Declaration certificate for local production and content

Annexure A: One-in-ten-year-return weather data obtained from the South African Weather Bureau for Kusile Power Station

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

Month	Weather measurement				
	Cumulative rainfall (mm)	Number of days with rain more than 10mm	Number of days with min air temp < 0 deg.C	Number of days with snow lying at 08:00 CAT	[Other measurements if applicable]
January	129	5	0	0	
February	85	3	0	0	
March	80	2	0	0	
April	34	1	1	0	
May	13	1	5	1	
June	5	0	16	1	
July	1	0	16	1	
August	3	0	7	1	
September	12	1	2	0	
October	47	2	0	0	
November	68	2	0	0	
December	76	3	0	0	

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

The *Employer's* Weather station on site records the weather data.

Annexure B: Insurance provided by the *Employer*

These notes are provided as guidance to tendering contractors and the Contractor about the insurance provided by the Employer. Details of the insurance itself are available from the internet web link given below.

1. For the purpose of works contracts, insurance provided by Eskom (the *Employer*) has been arranged on the basis of “project” or “contract” value, where the value is the total of the Prices at Completion of the whole of the works including VAT.

A “project” is a collection of contracts or work packages to be undertaken as part of a single identified capital expansion or refurbishment of a particular asset or facility.

A “contract” is a single contract not linked to or being part of a “project”.

2. For ECC3 there are three main “formats” of cover and deductible structure; Format A, Format B and Format Dx.

Format A is for a project or contract value less than or equal to R350M (three hundred and fifty million Rand) inclusive of VAT.

Format B is for a project or contract value greater than R350M (three hundred and fifty million Rand) inclusive of VAT.

In the case of contracts / packages within a project:

- For a contract / package of R50M which is part of a R400M project, Format B will apply
- For a contract / package of R250M which is part of a R6 billion project, Format B will apply;
- For a contract / package of R120M which is part of a R350M project Format A will apply;

For a contract which is not part of a project the same limits apply:

- For a contract of R50M, Format A will apply
- For a contract of R355M, Format B will apply.

Format Dx applies only to Distribution Division projects and contracts. If a Distribution Division project or contract exceeds the Format A limit, the Eskom Insurance Management Services [EIMS] need to be contacted for advice on how to formulate the insurance cover. Cover and deductibles for Distribution Division are per the relevant policy available on the internet web link given below.

Format A generally applies to Transmission Division projects and contracts. If a Transmission Division project or contract exceeds the Format A limit, the Eskom Insurance Management Services [EIMS] need to be contacted for advice on how to formulate the insurance cover.

3. Tendering contractors should note that cover provided by the *Employer* is only per the policies available on the internet web link listed below and may not be the cover required by the tendering contractor or as intended by each of the listed insurances in the left hand column of the Insurance Table in clause 84.2. In terms of clause 84.1 “the *Contractor* provides the insurances stated in the Insurance Table except any insurance which the *Employer* is to provide”. Hence the *Contractor* provides insurance which the *Employer* does not provide and in cases where the *Employer* does provide insurance the *Contractor* insures for the difference between what the Insurance Table requires and what the *Employer* provides.
4. When the Marine Insurance is required the *Contractor* needs to obtain a copy of the latest edition of Eskom’s Marine Policies Procedures found at internet website given below.
5. **Further information and full details of all Eskom provided policies and procedures may be obtained from:**

http://www.eskom.co.za/live/content.php?Item_ID=9248

C1.2b ESC3 Subcontract Data

Part two - Data provided by the *Subcontractor*

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

Clause	Statement	Data
10.1	The <i>Subcontractor</i> is : Address Tel No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	
11.2(14)	The following matters will be included in the Risk Register	
11.2(18)	The subcontract <i>working areas</i> are the Site and	
24.1	The key people are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job: Responsibilities: Qualifications: Experience: 3 CVs of Key people	
B	Priced contract with bill of quantities	
11.2(21)	The <i>bill of quantities</i> is in	Part C2.2
11.2(31)	The tendered total of the Prices is	R (in figures) (in words), excluding VAT
	Data for Schedules of Cost Components	<i>Note "SCC" means Schedule of Cost Components started in ECS3, and "SSCC" means Shorter Schedule of Cost Components</i>

B	Priced contract with bill of quantities	Data for the Shorter Schedule of Cost Components		
41 in SSCC	The percentage for people overheads is:			
21 in SSCC	The published list of Equipment is the last edition of the list published by The percentage for adjustment for Equipment in the published list is			
22 in SSCC	The rates of other Equipment are:	Equipment	Size or capacity	Rate/Day
61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates. Please insert another schedule if foreign resources may also be used	Category of employee No Design done by Subcontractor		Hourly rate

PART 2: PRICING DATA

ESC3 Option B

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

C2.1. Pricing assumptions: Option B

2.1 Pricing assumptions

If the *Subcontractor* is to be paid an amount for the item which is not adjusted if the quantity of work in the item changes, the *Subcontractor* enters the amount in the Price column only; the Unit, Quantity and Rate columns being left blank.

If the *Subcontractor* is to be paid an amount for the item of work which is the rate for the work multiplied by the quantity completed, the *Subcontractor* enters the rate which is then multiplied by the expected quantity to produce the Price, which is also entered.

All Prices are to be shown excluding VAT unless instructed otherwise by the *Contractor* in Tender Data or in an instruction the *Contractor* has given before the *Subcontractor* enters his Prices.

The proposed rates in the rates column per item are for installation of the Subcontract Works complete, and in accordance with the Subcontract Works information and specifications.

Organogram

Subcontractor must attach a detailed organogram

Curriculum Vitae

Subcontractor must attach Curriculum Vitae of key people and positions on the organogram

Price Adjustment for Inflation (X1.1)

Prices to be fixed for the First year –to, thereafter, escalation will be applicable as per the following formulas:

Preliminary & General

xx% - Fixed

xx% - Seifsa Table C3(a) - All hourly paid employees

xx% - Seifsa Table D – Consumer Price Indices – All Income groups

Actual Labour cost

xx% - Fixed

xx% - Seifsa Table C3(a) - All hourly paid employees

Transport cost

xx% - Fixed

xx% - Seifsa Table L2 – Road Freight

C2.2 the *bill of quantities*

Bill of Quantities - attached

See Addendum A

PART 3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
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C3.2	<i>Subcontractor's Works Information</i>	1
	Total number of pages	21

C3.1 Contractor's works Information

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1 Description of the works

Employer's objectives and purpose of the works

The section includes the general description and scope of work for the Erection and Installation of Electrical, Auxiliary Power and C&I Trunk Cable for Units 2 to 6 including Common Plant for the Kusile Power Station - Package 20A

The scope of work includes the installation of all electrical equipment and materials shown in the Kusile Bill of Quantity (BOQ), as indicated on the drawings and as described herein.

The work under these specifications shall include but not limited to the following:

- Install all medium voltage cables, low voltage cables, and control cables including terminations, cable joining kits (splices), circuit and conductor labelling as specified.
- Install all fire sealing as per standard specifications.
- Install all materials and equipment necessary to provide a complete lighting and small power system for the Turbine, Boiler and Common Plant areas including lighting distribution boards, transformers, cabling, racking, conduits, fixtures, sockets, and supports.
- Install all materials and equipment for operating the fans within the boiler lift shaft with interface points to CBMS.
- Install all lighting equipment and material required for completion of roadway and parking lot as indicated on the drawings, Including High Mast Lights and civil works related to the High Mast Lights (e.g. Excavations, foundations, concrete cap to cable trenches etc.)
- Supply and install materials and equipment necessary to complete the security non-lethal electric fence including modification to security lighting power supply system
- Install all materials necessary to bond all equipment including connections and/or extension of existing earth stingers to all equipment and structural steel.
- Install all cable racking, hangers and supports for both power and C&I cables including labelling, cable rack earthing conductors and earthing clamps.
- Install lightning protection system equipment (if required) for miscellaneous areas and buildings.
- Install 15kV:415V Miniature Substations as indicated on the drawings.
- Moving and reinstallation of existing dual primary voltage 22/15kV:415V Miniature Substations as identified by the Construction Manager.
- Install miscellaneous electrical equipment such as power panels, welding sockets and local disconnect switches.
- Ensure Quality control and assurance aligned to Eskom RoteK Industries policies and procedures
- The above explanations and listings are intended to give a general definition of the scope of Works, and shall not be construed to be an itemized listing of each element of work required. The Sub-contractor shall be responsible for construction of complete facilities, conforming in all respects to the details and requirements of the specification, drawings, and other contractual documents.

Miscellaneous Services

Miscellaneous services not otherwise specifically called for shall be supplied by the *Subcontractor* in accordance with the following:

- Removal and replacement of concrete lids for cable trench access
- All nuts, bolts, gaskets, special fasteners, etc., between components and equipment supplied by the *Contractor*, erected or as specified under these specifications.
- All nuts, bolts, gaskets, special fasteners, etc., between *Contractor* supplied and *Subcontractor* supplied components and equipment.
- Removal of any temporary shipping braces after installation.
- Supply all special tools required for erection and construction *Contractor* supplied equipment, including lifting beams and lugs necessary to install scope of work identified.
- Touch up paint of surfaces damaged during installation.
- Tests and inspections as required by applicable South African National Standards (SANS), International Standards, Eskom and Local Standards.
- Necessary coordination with other contractors to insure work is performed in proper sequence and that all work proceeds in a harmonious fashion.
- Connection of temporary power supply to all anti-condensation heaters *Contractor* furnished equipment until permanent power supply is installed. This shall include all MV and LV boards, transformers, DC and UPS equipment.
- Installation of temporary power and/or lighting to various area as directed by the *Contractor*.

Works Not Included Under These Specifications

The following items are excluded from the Subcontractor's scope of subcontract Works and will be furnished and installed by others:

- Materials and services specified herein as furnished by the Employer.
- Construction facilities, utilities source at predetermined locations by the Engineer for Subcontractor's use.
- Concrete cable tunnels and trenches.
- Below grade earth grid.
- Overall environmental permitting responsibility.
- Plant operating personnel for start-up and initial operation.

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

As a result of the measuring demand for electricity in South Africa, the Employer has decided to increase its electricity generation capacity.

Accordingly, the Employer intends to build a Coal-fired Power Station, with a nominal generation capacity of 4800MW. The Station is to be designed to operate at maximum continuous rating during the day with reduced load at night, and with the ability to two-shift (later in the life of the station).

1.2 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
EIA	Environmental Impact Analysis
ROD	Record of Decision
CEMP	Construction Environmental Management Plan
EN	Exceptions Noted
SANS	South African National Standards
ASGI-SA	SD&L

2 Management and start up.

2.1 Management meetings

Regular meetings of a general nature may be convened and is chaired by the *Contractor* or *Supervisor* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events,	To be determined	<i>Contractor's</i> office	<i>Project Manager</i> and or <i>Supervisor</i> , <i>Subcontractor</i> and <i>Others</i> as required
Overall contract progress and feedback	As required	<i>Contractor's</i> or <i>Subcontractor's</i> office	<i>Project Manager</i> and or <i>Supervisor</i> , <i>Subcontractor</i> and <i>Others</i> as required
Risk Assessment Meetings	As Required	<i>Contractor's</i> or <i>Subcontractor's</i> office	<i>Project Manager</i> , <i>Subcontractor</i> and <i>Others</i> as required
Safety Representative meeting	To be determined	<i>Contractor's</i> office	<i>Project Manager</i> and or <i>Supervisor</i> , <i>Subcontractor</i> and <i>Others</i> as required
Site (Kick Off) meeting	Before the Subcontractor's Site Establishment after	Venue to be determined by the	<i>Project Manager</i> , <i>Subcontractor</i> and

	official contract is placed	<i>Project Manager</i>	Others as required
--	-----------------------------	------------------------	--------------------

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.

Reference is made to the Appendix: *Employer's Policies and Procedures; Programme, Progress Reporting & Meeting Requirements; Section 4: In particular Parts 2 and 4*

2.2 Documentation control

Reference is made to the Annexures:

- *Employer's Policies and Procedures; Document Management & Communication, Section 4: in particular Part 3*
- *Employer's Policies and Procedures; Kusile Project Records Control work Instruction: Unique Identifier 240-124499000*
- *Employer's Policies and Procedures; Kusile Project Document Management Work Instruction: Unique Identifier 240-124499452*
- *Employer's Policies and Procedures; Kusile Project Document Handover Specification: Unique Identifier 240- 128515850*

The *Contractor* to provide:

- Printers and stationery for the Data Packs
- Files for the Data Packs

2.3 Health and Safety Risk Management

The *Subcontractor* complies with the health and safety requirements contained in Annexures to C4: Site Information:

- *Employer's Policies and Procedures; Section 4: in particular Parts 2 and 4,*
- Procedure Manual for Perform Occupational Health and Safety Management and Environmental Management: Conduct EH&S Incident Management: 32-95
- Other related procedures in the annexures.

- Method statements containing sufficient detailed information to demonstrate compliance to the schedule. The detailed information is required as follows:
- Technical ability and Track Record to Execute Works
 - Safety Performance Statistics over previous 5 years for similar size projects
 - Environmental Performance Statistics over previous 5 years for similar size projects
- Method Statements detailing the manner in which the *Subcontractor* will comply with SHE Requirements
 - Safety Management Systems for tasks involved in such a project
 - Environmental Management System for tasks involved in such a project showing consideration for the ROD and EMP
 - Signed and dated SHE Policy
 - Roles and Responsibilities including man job specifications and medical records
 - Examples of persons who would be nominated for the following positions including CV's demonstrating competencies for such roles:
- 16(2) as per OHS Act
- 8(1) as per Construction Regulations
- 8(5) as per Construction Regulations
- Hazard Identification Risk Assessment for such a project
- Environmental aspect and impact identification for such a project

2.4 Environmental constraints and management

The *Subcontractor* complies with the environmental criteria and constraints stated in the Annexures:

- Annexure D - Standard Environmental Specification
- EH&S Incident Management: 32-95 for managing incidents
- *Employer's* Policies and Procedures; Environmental Management Plan; Section 4: Parts 9 and 10
- The *Subcontractor* complies with Kusile Power Station's Safety, Health and Environmental specifications for *Principal Contractor's*
- The *Subcontractor* adheres to the Kusile Power Station Environmental Management System that meets the requirements of the Code of Practice for Environmental Management Systems (EMS), ISO 14001:2015

- The relevant Environmental Management Programmes (EMP's) and Aspects on the Environmental Management System (EMS) database is continually updated
- The *Subcontractor* complies with all relevant environmental legislation, as detailed in the latest version of the Kusile Power Station Legal Register
- The *Subcontractor* complies with all operational procedures that include environmental requirements, relevant to the Works Information or Scope of this contract.
- The *Subcontractor* complies with any new environmental requirements, relevant to the Works Information or Scope that may come into effect as part of Kusile Power Station Environmental Management System during the duration of this contract.
- The *Subcontractor* ensures representation at Environmental meetings that may require input for the updating of the EMS as well as training on an ad-hoc basis.

2.5 Quality assurance requirements

2.5.1 General

The *Subcontractor* must ensure that the *Subcontractor* is aligned to Eskom RoteK Industries (ERI) Quality policies, procedures and standards.

- a) The *Subcontractor* comply with the *Employer's* quality requirements including those listed in the *Employers* specification document called "Supplier Contract Quality Requirements" number QM58.
- b) Compliance to ISO 9001 principals is a mandatory requirement for this contract. The *Subcontractor* uses the QMS for all phases of the Project. The *Subcontractor* provides evidence of a fully implemented QMS within its own organisation. The *Contractor* may at his sole discretion carry out an audit on any supplier; sub-supplier's or Subcontractor's QMS for acceptance.

2.5.2 Quality Management documents requirements

The *Subcontractor* submits the following documents, within 30 days of the Contract Date, to the *Contractor* for review and acceptance prior to the commencement of work

The *Subcontractor* will supply the *Contractor* with a QCP which will detail the *Subcontractor's* organisation, quality assurance and quality control procedures within that organisation specific to this project. The QCP must be aligned to, and reference ISO 10005:2005 QMS, guidelines for quality plans and in compliance with the guideline in QM 58.

The *Subcontractor* conforms to the Quality Management requirements as per ISO 9001 requirements and the Eskom Supplier Contract Quality Requirements Specification (QM 58). The *Subcontractor* must submit documentation as stipulated in QM58, that is,

- 1) **documents to be submitted during tender stage (3.2.1 and 3.3.3 of QM58)**
- 2) **documents to be submitted 30 Days of Contract Award (3.5 of QM58)**

3) **documents to be submitted during execution of the contract (3.5 of QM 58) and**

4) **documents to be submitted on completion of the contract (3.5.10 of QM58).**

The *Subcontractor* develops a QCP which makes reference to the *Contractor's* QMS Procedures to be used in this Contract:-

- a) The *Subcontractor's* QMS compliance with the requirements of ISO 9001 principals
- b) *Contractor's* quality manual
- c) *Contractor's* quality procedures
- d) *Contractor's* quality forms and work instructions
- e) *Contractor's* quality system documents referenced in this Subcontract Works Information

The *Subcontractor* supplies the *Contractor* with a QCP or ITP for review and acceptance. The *Subcontractor* supplies the *Contractor* with a detailed contract organogram showing the quality personnel to be used in the subcontract. The *Subcontractor* provides CVs of the quality management employees who will be responsible for quality on site.

Quality Management employee's responsibilities include but are not limited to the following:

- a) Implementation of the QMS on site
- b) Administration of QA/QC systems on site
- c) Verification of approval status of Subcontractor's QCP and procedures
- d) On-site inspections
- e) Co-ordination, inspection and verification of the *Contractor's* intervention points
- f) Review of *Subcontractor* testing and inspection documents (procedures, test results)
- g) Weekly and monthly progress reporting on quality performance

The *Subcontractor* submits as a minimum the following documents, as required by the *Contractor*, which requirement does not constitute a compensation event, during the execution of the Works:-

- a) Updated QCP register
- b) Inspection notifications accompanied by their inspection report
- c) Non-conformance and Defects registers and reports
- d) Method statements
- e) Updated Site inspection schedules.
- f) Inspections completed / outstanding.
- g) Inspection and test reports
- h) Weekly and monthly contract quality progress report

- i) *Subcontractor* to provide all documentation required in order for the *Contractor's* completion of the data books for the completed Works, before commissioning can commence (refer to the data book specification)

2.5.3 Quality Responsibility

- a) The *Subcontractor* is accountable for the quality of the output and liable for any failures.
- b) The *Subcontractor* is responsible for defining the level of intervention of QA/QC or inspections. These are in line with the *Employers* requirements.
- c) The *Subcontractor* is responsible for defining the level of intervention of QA/QC or inspections to be imposed on his Sub-subcontractor, suppliers and sub-suppliers and must ensure that these are in line with the *Contractor's* requirements.
- d) The intervention requirements take into consideration the criticality of the Plant and Material.
- e) The interventions points include all witness, hold, verification, surveillances and review points required by the *Contractor*. The *Subcontractor's* failure to allow the intervention points will constitute a non-conformance. (Refer to section 2.5.4 below).

2.5.4 Inspections

- a) The *Subcontractor* is responsible for the inspection of all the Works that is performed and the *Contractor* only verifies that the Works is conducted as per the Contract.
- b) The *Subcontractor* drafts a QCP or ITP in alignment to the *Contractor's* existing documentation, which shows each activity from the Subcontract Works Information and submits to the *Contractor* for acceptance.
- c) The *Subcontractor* conducts all inspections in accordance with the accepted QCP / ITP.
- d) The *Subcontractor* provides suitably qualified personnel to conduct on-site inspections
- e) The *Subcontractor* ensures that all the Subcontractor's Works are inspected and approved before the *Contractor* is invited for verification.
- f) The *Subcontractor* provides a minimum of 2 working days' notice for on-site inspections. The notice contains copies of the *Subcontractor's* inspection reports.

Damages as a result of the *Subcontractor's* failure to comply with the inspection requirements as specified in this section is borne by the *Subcontractor* and no compensation event will arise out of this.

2.5.5 Non Conformances and Defects

Where NCs and Defect notifications are issued, the *Subcontractor* acknowledges receipt within two (2) working days and proposes corrective and preventive actions to the *Contractor* within 14 days. The corrective and preventive actions will include the implementation and completion dates. Progress on all NCs and Defect notifications issued to the *Subcontractor* must be reported to the *Contractor* on weekly basis.

- a) The *Subcontractor's* quality manager keeps a register of all NC and Defect notifications issued

- b) Deviations from the Subcontract are treated as a non-conformance.
- c) Records of NCs and Defect notifications are kept and form part of the data book records.

To ensure reduction of non-conformances, the *Contractor* will implement a penalty to the value of R50 000.00 for every three (3) repeat NCs issued during the contract period.

During the contract execution phase, the *Sub-contractor* will be monitored by the *Contractor* for performance on quality related aspects. The monitoring will be in the form of audits and assessments. The quality department will be involved in every assessment to ensure that all NCs and Defects raised are closed or the necessary penalties are implemented as stipulated above.

2.5.6 Quality Reporting

The *Subcontractor* submits a monthly quality report, on the last working day of the month. The report includes but not limited to the following:

- a) A register of NCRs and defects
- b) Updated QCP / ITP register
- c) QA monthly report summary
- d) Planned and completed local and foreign inspection dates
- e) Completed and outstanding Inspections
- f) Audit findings report

2.5.7 Preservation of Free Issue Material and Equipment

The *Subcontractor* is responsible for ensuring that all products placed in their care are preserved in their appropriate manner as described in their specifications or in Eskom preservation, shipping and transportation procedures as applicable.

The *Subcontractor* ensures that all storage maintenance requirements for Free Issue Material and Equipment are properly implemented to preserve the Free Issue Material and Equipment against adverse conditions, deterioration, damages, etc. Storage and preservation procedures for the different products are submitted to the *Contractor* for review and acceptance. The *Contractor* may request to inspect the stored products at any given point during the storage period of the product.

2.6 Subcontractor's management, supervision and key people

Reference is made to the Annexures:

Employer's Policies and Procedures; Section 4: Parts 1 to 11

- Resource usage histogram.
- Organogram indicating the *Subcontractor* proposed structure for the execution of the Works.
- VDSS provision and must be consistent with tender programme.

- Completed Ground Area Requirement (Section 4 - Part 5) From [IA-2/2A]
- Completed Water Requirement (Section 4 - Part 5) From [IA-2/1B]
- Completed Electric Power Requirement (Section 4 - Part 5) From [IA-2/1C]
- Completed Accommodation Requirement (Section 4 - Part 6.2) From [IA-2/1A]

2.7 Invoicing and payment

Reference is made to the Annexures:

Employer's Policies and Procedures; Section 4:

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

It is the responsibility of the *Subcontractor* to ensure that the invoices are sent electronically to Accounts Payable at invoiceserilocal85@eskom.co.za , and a copy must also be sent to the *Contractor's* Commercial Department at the Kusile Power Station

- Name and address of the *Subcontractor* and the *Contractor's Project Manager*;
- The contract number and title;
- *Subcontractor's* VAT registration number; - 4840229670
- The *Contractor's* VAT registration number -
- Description of service provided for each item invoiced based on the BOQ;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT.

2.8 Forecast Rate of Invoice (FRI)

The *Subcontractor* should provide an FRI on a monthly basis

2.9 Insurance Provided by the Employer

Refer Contract data Clause 84.1

2.10 Contract Change Management

Each change/compensation event (whether positive or negative) is submitted, using the same format as is used for assessments. The change indicates resources used, the quantity, the actual cost of the resources, the time impact and the percentage fee for the said resource.

Each change/compensation event has a unique number and has the date of submission on it and is submitted to the *Project Manager* for assessment.

2.11 Records of Defined Cost, payments and assessments of compensation events to be kept by the *Subcontractor*

Monthly assessments, compensation events are kept until the Final certificate is issued.

2.12 Training workshops and technology transfer

Reference is made to the Annexures:

- *Employer's* Policies and Procedures, Section 4:
- *Employer's* Skills development policy and,
- other relevant annexures referred to in C4: Site Information

The *Subcontractor* refers to the Attachment: *Subcontractor's* General SD&L Requirements; Section 1.5, and proposes to give experiential training to engineers in training as per the guidelines.

The *Subcontractor* submits the implementation plan days 21 days after signing the contract.

The *Subcontractor* submits SD and L reports on a monthly and quarterly basis demonstrating the progress made on SD and L.

The *Subcontractor* reports on the available business opportunities

2.13 Transport to Site

Transport to site will be for the *Subcontractors* account and must be provided via local service providers.

The *Contractor* to provide:

- On site transport
- Truck for Material Cable Drums
- Truck for Cable Racking

3 Procurement

3.1 People

3.1.1 Minimum requirements of people employed on the Site

The *Subcontractor* to provide CVs indicating experience and qualification which will be approved by the *Employer*, if any employee of the *Subcontractor* is found to be unsuitable for the position, he will be released from site

The *Subcontractor* refers to Annexures:

- *Employer's* Policies and Procedures; Induction; Section 4: Part 1

- *Employer's Policies and Procedures; Section 4: in particular Parts 4 and 6*
- *Employer's Substance Abuse Policy; 9th April 2014*
- *Employer's Site Specific Agreement, 5 June 2014*
- *Employer's Communication Policy 5th April 2014*
- *Employer's HR and IR Policy Directive 3rd April 2014*
- *Employer's Organisational Rights Policy 7 April 2014*
- *Employer's Productivity Policy 6th April 2014*
- *Employer's Remuneration Policy 11th April 2014*
- *Employer's Skills Development Procedure 14th April 2014*
- *Employer's Substance abuse policy 9th April 2014*
- *Employer's Transport Policy 10th April 2014*
- *Employer's Medupi and Kusile Partnership Agreement 7th June 2013*

And other related Annexures referred to in C4; Site Information.

3.1.2 Site Specific Agreement (SSA)

The *Subcontractor* must adhere to the Site Specific Agreement (SSA) (attached). SSA calendar for 2021 which will be provided once published

3.2 SUPPLIER DEVELOPMENT AND LOCALISATION

Refer to Annexures J and K which are attached

3.2.1 Subcontractor SD&L Plan

The *Subcontractor* must provide an SD&L implementation plan, aligned to 30% of the contract amount, within ONE (1) month of contract award

4 Construction

4.1 Temporary works, Site services & construction constraints

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

The *Subcontractor* refers to Annexures:

- *Employer's Policies and Procedures; Induction; Section 4: in particular Parts 1 and 4*
- *Employer's Substance Abuse Procedure; Document Identifier 32-37*

- *Employer's* Kusile SHE Specification; Unique Identifier 203-54671; Rev 4; 9 October 2015

And other related Annexures referred to in C4; Site Information.

The *Subcontractor* complies with all requirements contained in the Kusile Power Station Safety, Health and Environmental Specifications for Principal *Contractors*

The *Subcontractor* supplies the *Project Manager* with daily updated copies of:

- Permit To Work
- Access permits
- Excavation permits
- Workers Register
- Daily Toolbox Talks
- Daily Job Observations
- Job risk Assessments
- Method Statements

No work commences without:

The *Employer* issuing permits to work or ensuring that all isolations have been done, if required.

- The *Subcontractor* submits an updated safety and quality file as per statutory requirements. Without an updated file no work may commence. (To be kept by the Safety Department of the *Contractor* with a copy for the *Employer*)
- All the relevant Safety Compliance Requirements in the *Subcontractor's* Safety File being completed signed and approved.
- All requirements from the Construction Regulations being met.
- The *Subcontractor* attends the compulsory safety induction course for *Contractors* at Kusile Power Station.
- The *Subcontractor* has his own Authorised Supervisor, Hot Work Monitor and Fire Watch in place, where required.
- The required permits to work have been taken out.
- All required Method Statements has been approved.
- The QIP (Quality Management Plans) in place and approved.
- The *Project Manager* approves all equipment prior to construction.

- The *Subcontractor* makes use of the provided secure storage space for any equipment. If required, very large equipment is only to be stored in an area provided and accepted by the *Project Manager*.

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

The *Subcontractor* refers to Annexures:

- *Employer's Policies and Procedures*; Section 4; in particular Part 4,
- Barricading Standard: Unique Identifier 203-42301
- *Employer's Kusile Trench and Excavation Procedure*; Unique Identifier 203-13626; Rev4,
- Other related standards and procedures attached

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

The *Subcontractor* refers to Annexures:

- Kusile PS –Platform Scope of Works: Unique Identifier: 203-83509
- *Employer's Site Specific agreement (SSA)*
- *Project agreement (PA)*
- *Employer's Policies and Procedures*; Induction; Section 4: Part 1, and,
- *Employer's Policies and Procedures*; Project Site Regulations and General requirements, Section 4; Part 4,
- Other related standards and procedures attached

4.1.4 Health and safety facilities on Site

The *Subcontractor* refers to Annexures:

- *Employer's Policies and Procedures*; Section 4: in particular Parts 4, 5 and 6, and
- Other related standards and procedures attached
- Remote canteens

And other related Annexures referred to in C4; Site Information.

The *Subcontractor* will adhere to all statutory requirements as required by the OHS act 85 of 1993.

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

The *Subcontractor* refers to Annexures:

- *Employer's Policies and Procedures*; Section 4: in particular Parts 4, 5 and 6, and
- Other related standards and procedures attached

4.1.6 Title to materials from demolition and excavation

The Subcontractor has no title to materials from excavation and demolition

4.1.7 Subcontractor's Equipment

- The *Subcontractor* supplies Certificates of Compliance for all electrical distribution panels used.
- The *Subcontractor* installs sufficient cabling to reach the points of electrical supply.
- The *Subcontractor* supplies transportation for the *Subcontractor's* personnel off site.
 - Note: - Special mention is made of the fact that no personnel may be transported on the back of any open vehicles. Personnel may only travel in a vehicle with proper seating and safety belts installed.
- The *Subcontractor* installs its own Safety lighting for clear visibility when and where necessary.
- The *Subcontractor* will secure all *Contractors'* tools and special equipment.

4.1.8 Equipment provided by the Contractor

The *Contractor* provides all specialized tool and Equipment:

- Lifting equipment where necessary
- Forklifts
- Specialized Craneage
- Rope Access- AAC Columns
- Crane Trucks
- Low- Beds for large transformers
- Core Drill equipment
- VLF Tester- Cable Pressure Testing
- LV Cable Test equipment
- Hydraulic Crimpers
- Cable Rollers,
- Cable Stands
- Scaffolding

4.2 Completion, testing, commissioning and correction of Defects

4.2.1 Work to be done by the Completion Date

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

The *Subcontractor* refers to Annexures:

- *Contractor* Document Control Work Instruction: Unique Identifier: 203-15759,
- 240-128515850 Rev 1 Documentation Handover Specification,
- And other related Annexures referred to in C4; Site Information.

4.2.2 Use of the *works* before Completion has been certified

Clause 35.2 in NEC3 Engineering and Construction Subcontract provide that the *Employer* may use any part of the *works* before Completion has been certified but if he does so he takes over the part of the *works* except if the use is for a reason stated in the Works Information.

4.2.3 Materials facilities and samples for tests and inspections

The *Contractor* refers to Attachment: Eskom Specification No. 240-56227443 and QM58 Quality requirements,

- ITP's,
- Submission time requirement before tests notifications'
- And other related Annexures referred to in C4; Site Information

4.2.4 Commissioning

The *Subcontractor* refers to Annexures:

- *Employer's* Commissioning and Completion of Kusile Power Station; Unique Identifier: 203-3235,
- *Employer's* Policies and Procedures; Section 4
- 240-128515850 Rev 1 Documentation Handover Specification (2)Kusile PS – Platform Scope of Works: Unique Identifier: 203-83509,

And other related Annexures referred to in C4; Site Information.

4.2.5 Take over procedures

The *Subcontractor* refers to Annexures:

- *Employer's* Commissioning and Completion of Kusile Power Station; Unique Identifier: 203-3235,
- *Employer's* Policies and Procedures; Section 4

- Kusile PS – Platform Scope of Works: Unique Identifier: 203-83509

And other related Annexures referred to in C4; Site Information.

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

The *Project Manager* arranges for the *Employer* to allow the *Subcontractor* access to and use of a part of the *works* which has been taken over if needed to correct a Defect. After the *works* have been put into operation, the *Contractor* may require the *Subcontractor* to undertake certain procedures before such access can be granted.

4.2.7 Operational maintenance after Completion

No additional requirements

C3.2 Subcontractor's works Information

C3.2 *SUBCONTRACTOR'S* WORKS INFORMATION

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

Typical sub headings could be

- a) Plant and Materials specifications and schedules
- b) Other

This section could also be compiled as a separate file.

C4 *Employer's* Site Information

PART 4: SITE INFORMATION

Document reference	Title	No of pages
C4	This cover page	1
	Site Information	11
	Total number of pages	12

PART 4: SITE INFORMATION

Core clause 11.2(16) states

“Site Information is information which

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

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

1. Description of the Site and its surroundings

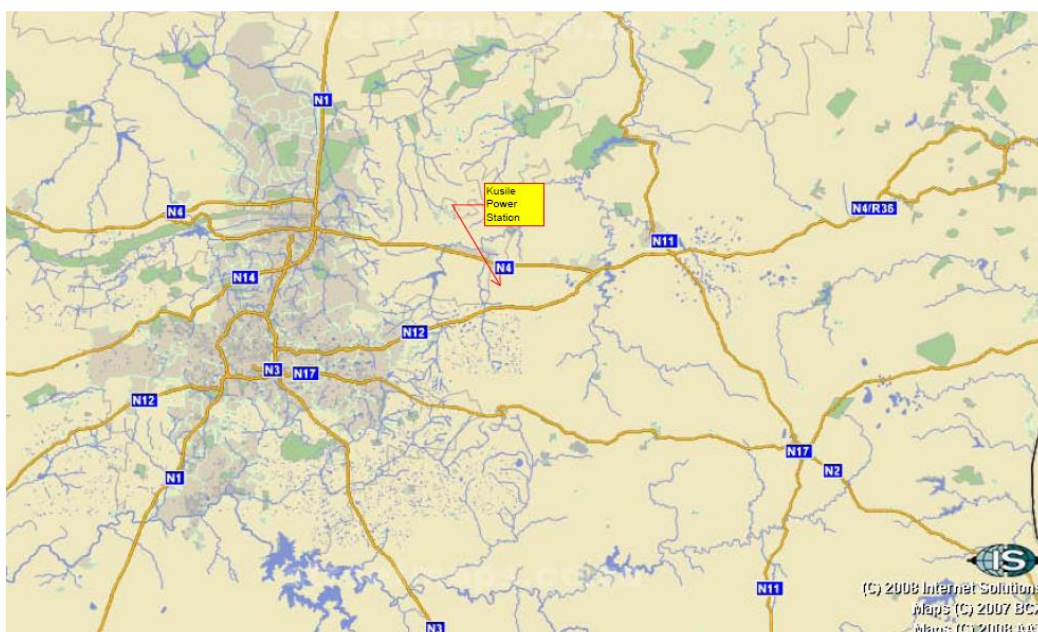
a. General description

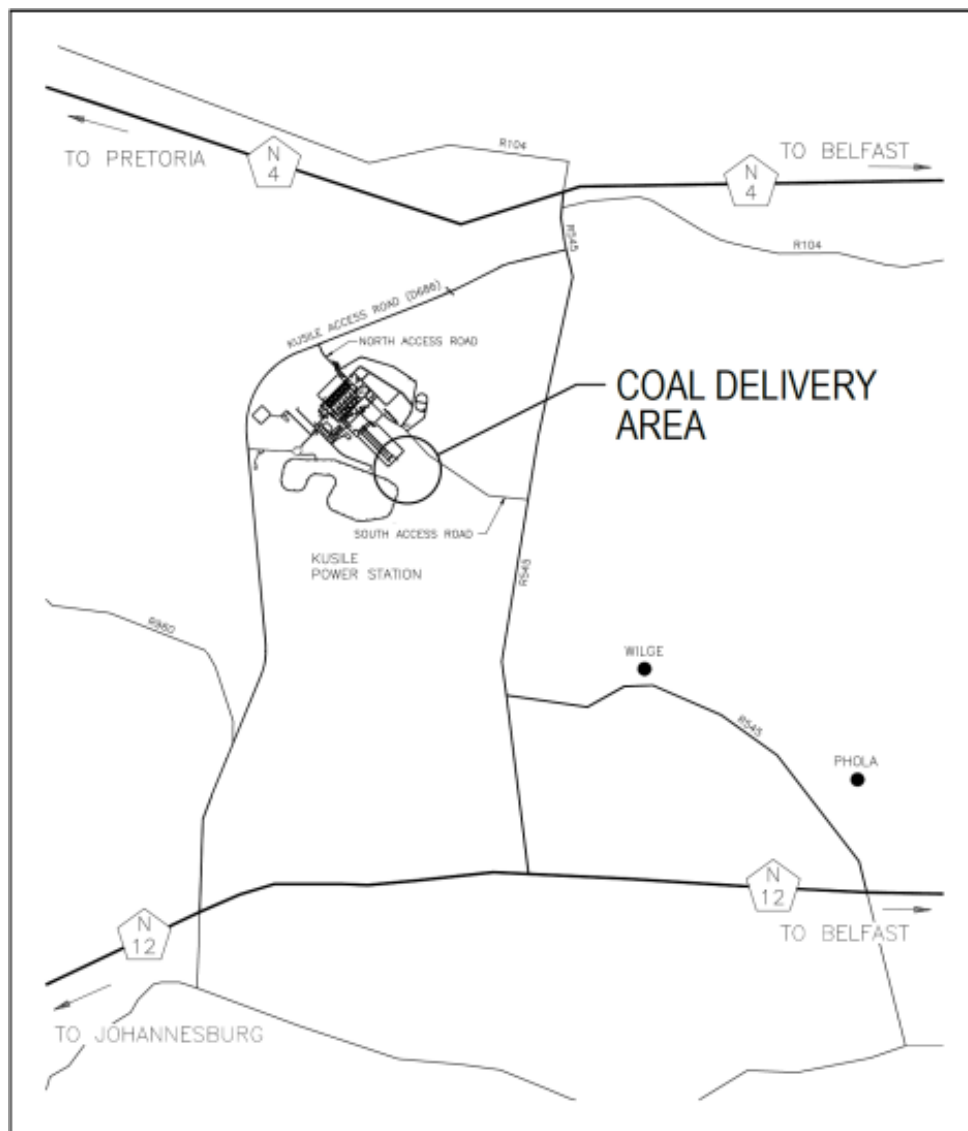
i. Site location

The Project Site for Kusile Power Station is situated approximately in the area between Witbank and Bronkhorstspuit, between the N4 and N12 freeways. The site is on the portions of the farms Hartbeestfontein 537-JR and Klipfontein 566-JR. The western boundary of the site lies parallel to and approximately 2500 meters west of road D686 (route R545) which is located in the Mpumalanga province of South Africa.

The site is in the Upper Olifant sub-area of the Olifant Water Management Area. The site falls within the B20F quaternary catchment and the larger Wilge River catchment

The approximate location and access routes are shown in the following figures.





LOCALITY PLAN (NOT TO SCALE)

ii. Road Access

The closest national access routes are roads are N12 and N4.

The Project Site is accessed from the existing trunk road (R545) that runs from either N4 or N12. Accordingly, great care must be taken in managing the traffic flow through this route in order to minimise disruption and maximise public safety.

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

There are existing buildings and /or structures from previous contractors which will be provided.

b. Subsoil information

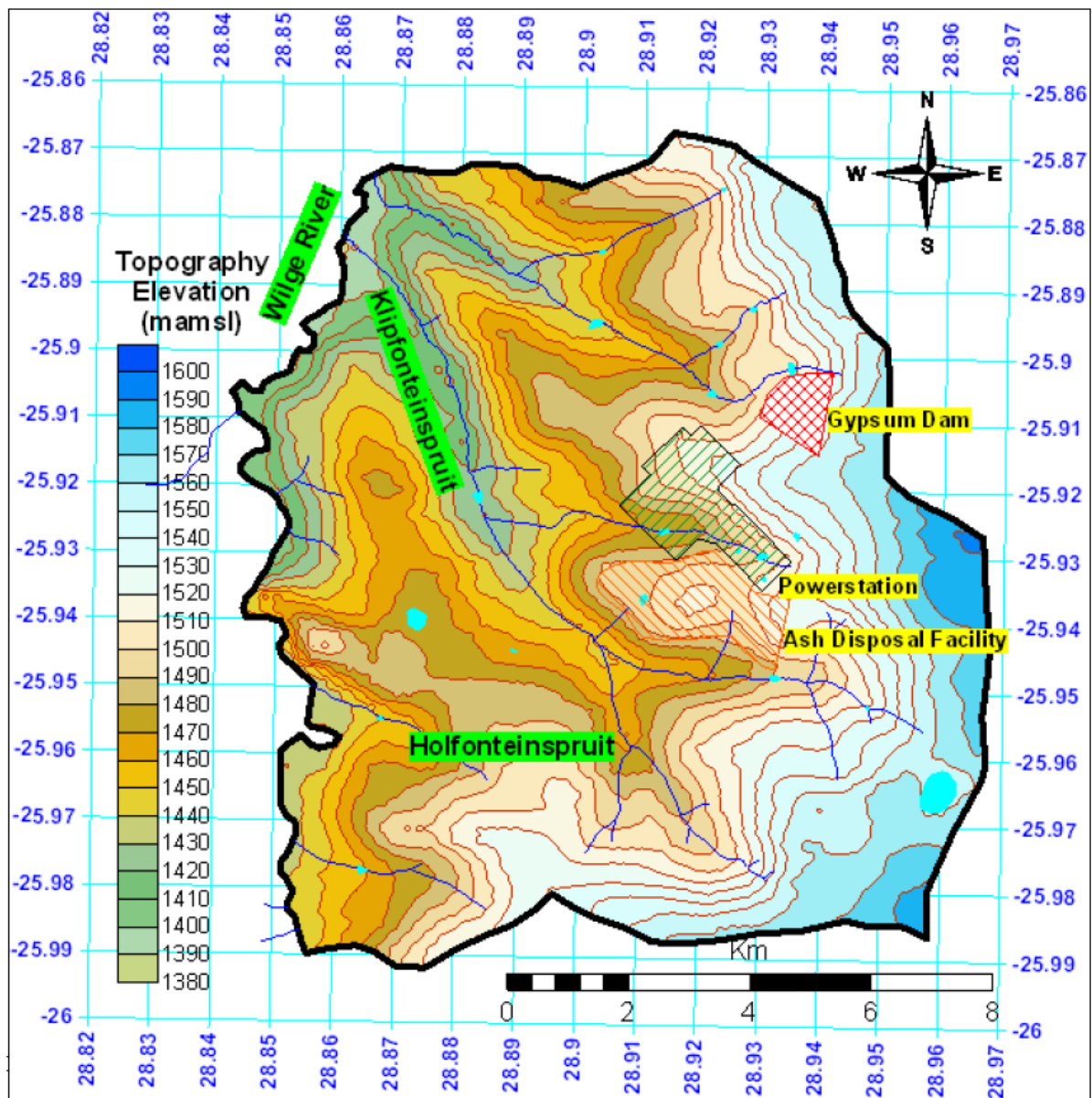
Geotechnical surveys have been carried out and are available on request from the *Project Manager*.

c. Hidden services

The *Subcontractor* confirms that no hidden services are in the site, which will affect construction.

d. Other reports and publicly available information

The surface topography consists of a gently undulating plateau of the Highveld region with gently sloped hills. The highest point of the site lies approximately at a height of 1520 meters above sea level (mamsl) on the eastern section of the site. The lowest point on the site is approximately at a height of 1440 meters above sea level (mamsl) on the western section of the site, illustrated in the Figure below.



i. General Weather Conditions

The project area displays the warm summers and cold winters typical of the Highveld climate. The average summer and winter daytime temperatures are 25°C and 20°C, respectively.

Rainfall occurs mainly as thunderstorms and drought conditions occur in approximately 12% of all years (Kendal power station environmental baseline data, undated).

The Environmental Potential Atlas for Mpumalanga and Gauteng places rainfall at site of the new power station as ranging between 621 mm and 750 mm per year.

The prevailing wind direction is north-west during the summer and east during winter. Winds are usually light to moderate. The Mean Annual Evaporation (MAE) in the area is 707 mm/a (1532 mm/a – S Pan).

ii. Rainfall

The following table details the average rainfall pattern adopted for the *Employer's* Kusile Power Station.

Month	Weather measurement				
	Cumulative rainfall (mm)	Number of days with rain more than 10mm	Number of days with min air temp < 0 deg.C	Number of days with snow lying at 08:00 CAT	[Other measurements if applicable]
January	129	5	0	0	
February	85	3	0	0	
March	80	2	0	0	
April	34	1	1	0	
May	13	1	5	1	
June	5	0	16	1	
July	1	0	16	1	
August	3	0	7	1	
September	12	1	2	0	
October	47	2	0	0	
November	68	2	0	0	
December	76	3	0	0	

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

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

The *Employer's* Weather station on site records the weather data.

The prevailing wind direction is north-west during the summer and south east during winter. Winds are usually light to moderate.

e. Specifications

Specifications/ Procedures/ Policies/ Drawings/ Directives issued by the *Employer*

<u>TITLE</u>	<u>UNIQUE IDENTIFIER</u>	<u>REV</u>
EMPLOYER'S POLICIES AND PROCEDURES; INDEX, SECTION 4: PART 0.1	-	
EMPLOYER'S POLICIES AND PROCEDURES; LIST OF TENDER RETURNABLES, SECTION 4: PART 0.2	-	
EMPLOYER'S POLICIES AND PROCEDURES; INTRODUCTION, SECTION 4: PART 1	-	
EMPLOYER'S POLICIES AND PROCEDURES; PROGRAMME, PROGRESS REPORTING & MEETING REQUIREMENTS, SECTION 4: PART 2	-	
EMPLOYER'S POLICIES AND PROCEDURES; DOCUMENTATION MANAGEMENT & COMMUNICATION, SECTION 4: PART 3	-	
EMPLOYER'S POLICIES AND PROCEDURES; PROJECT SITE REGULATIONS AND GENERAL REQUIREMENTS, SECTION 4: PART 4	-	
EMPLOYER'S POLICIES AND PROCEDURES; WORK COORDINATION PROCESS & WORK COORDINATION PLAN, SECTION 4: PART 4.1	-	
EMPLOYER'S POLICIES AND PROCEDURES; PROJECT SITE FACILITIES & SERVICES, SECTION 4: PART 5	-	
EMPLOYER'S POLICIES AND PROCEDURES; PERSONNEL, ACCOMMODATION & INDUSTRIAL RELATIONS; SECTION 4: PART 6	-	
EMPLOYER'S POLICIES AND PROCEDURES; GENERAL PROVISIONS, SECTION 4; PART 6.1	-	
EMPLOYER'S POLICIES AND PROCEDURES; PROGRAMME: ACCOMMODATION, SECTION 4: PART 6.2	-	
EMPLOYER'S POLICIES AND PROCEDURES; PLANT & MATERIAL IMPORT POLICY & PROCEDURE, SECTION 4: PART 7	-	
EMPLOYER'S POLICIES AND PROCEDURES; SHIPPING POLICY & PROCEDURE, SECTION 4: PART 8	-	
KUSILE SHE SPECIFICATION, 9 OCTOBER 2015	203-54671	05
EMPLOYER'S POLICIES AND PROCEDURES; ENVIRONMENTAL MANAGEMENT PLAN; SECTION 4: PART 10	4446/401281	
EMPLOYER'S POLICIES AND PROCEDURES; RECORD OF DECISION, SECTION 4: PART 11	-	

ANNEXURE D ~ STANDARD ENVIRONMENTAL SPECIFICATION	-	
EMPLOYER'S KUSILE PLANNING PROCEDURE	203-4649	1.0
GROUND AREA REQUIREMENT (SECTION 4 - PART 5) FROM [IA-2/2A]	-	
WATER REQUIREMENT (SECTION 4 - PART 5) FROM [IA-2/1B]	-	
ELECTRIC POWER REQUIREMENT (SECTION 4 - PART 5) FROM [IA-2/1C]	-	
ACCOMMODATION REQUIREMENT (SECTION 4 - PART 6.2) FROM [IA-2/1A]	-	
KUSILE POWER STATION PROJECT, CONTRACTOR DOCUMENT CONTROL WORK INSTRUCTION	203-15759	
KUSILE TRAFFIC MANAGEMENT PLAN	203-847	
EMERGENCY PREPAREDNESS AND RESPONSE PLAN	203-13885	
EMPLOYEES'S RIGHT OF REFUSAL TO WORK IN AN UNSAFE SITUATION PROCEDURE	240-43848327	
EKOM LIFE SAVING RULES	240-62196227	
ESKOM VEHICLE AND DRIVER SAFETY MANAGEMENT PROCEDURE	240-62946386	
KUSILE TRENCH AND EXCAVATION PROCEDURE	203-13626	04
KUSILE POWER STATION SPECIFICATION FOR STRUCTURAL CONCRETE	203-770	04
OHS ROLES & RESPONSIBILITIES AND STATUTORY APPOINTMENT TEMPLATES PRINCIPLE CONTRACTOR 5(1) (K)	240-64729708	
OCCUPATIONAL HEALTH AND SAFETY ACT NO 85 OF 1993; AGREEMENT IN TERMS OF SECTION 37(2)	-	
ESKOM ENVIRONMENTAL, OCCUPATIONAL HEALTH AND SAFETY INSIDENT MANAGEMENT PROCEDURE	32-95	
ESKOM SAFETY, HEALTH, ENVIRONMENTAL AND QUALITY POLICY	32-727	
ESKOM VEHICLE SPECIFICATION	32-345	
ESKOM CONTRACTOR HEALTH AND SAFETY REQUIREMENTS STANDARDS	32-136	
ESKOM WASTE MANAGEMENT STANDARD	32-245	
WORKING AT HEIGHT PROCEDURE	32-418	
EMERGENCY PLANNING	32-123	
KUSILE BARRICADING STANDARD	203-42301	
REMOTE CANTEENS	-	
SUPPLIER CONTRACT QUALITY REQUIREMENTS SPECIFICATION	QM58 240-105658000	
CONTRACTOR'S GENERAL SD&L REQUIREMENTS; SECTION 1.5	J and K-	

KUSILE NEC GUIDE COMMUNICATIONS INTERFACE MEMO	CIM	
EMPLOYER'S KUSILE CRANE COORDINATION PROCEDURE; UNIQUE IDENTIFIER	203-15442	
EMPLOYER'S SITE SPECIFIC AGREEMENT, 5 JUNE 2014	-	
EMPLOYER'S DISPUTE RESOLUTION PROCEDURE, 5 JUNE 2014	LPF 01-082013	
EMPLOYER'S SKILLS DEVELOPMENT POLICY	LPF 02-082013	
EMPLOYER'S HR AND IR POLICY DIRECTIVE 03 APRIL 2014	LPF 03-042014	
EMPLOYER'S ACCOMMODATION POLICY	LPF 04-042014	
EMPLOYER'S COMMUNICATION POLICY 5 APRIL 2014	LPF 05-042014	
EMPLOYER'S PRODUCTIVITY POLICY 6 APRIL 2014	LPF 06-042014	
EMPLOYER'S ORGANISATIONAL RIGHTS POLICY 7 APRIL 2014	LPF 07-042014	
EMPLOYER'S DUTIES OF THE PERM 08 APRIL 2014	LPF 08-042014	
EMPLOYER'S SUBSTANCE ABUSE POLICY 9 APRIL 2014	LPF 09-042014	
EMPLOYER'S TRANSPORT POLICY	LPF 10-042014	
EMPLOYER'S REMUNERATION POLICY 11 APRIL 2014	LPF 11-042014	
EMPLOYER'S SKILLS DEVELOPMENT PROCEDURE 14 APRIL 2014	LPF 14-042014	
EMPLOYER'S MEDUPI AND KUSILE PARTNERSHIP AGREEMENT 7 JUNE 2013	-	
CONSTRUCTION REGULATIONS (2015)	-	
KUSILE GENERATION PLANT SAFETY REGULATIONS	36-681	01
EMPLOYER'S COMMISSIONING AND COMPLETION OF KUSILE POWER STATION	203-3235	02
DOCUMENTATION HANDOVER SPECIFICATION	240-128515850	01
KUSILE PS SHEQ STATEMENT OF COMMITMENT	203-25285	
SHE OBJECTIVES AND TARGETS	203-6734	
RECORDS CONTROL WORK INSTRUCTION	203-28905	02
EMERGENCY PREPAREDNESS AND RESPONSE PLAN	240-126297330	01
KPS MINI-TASK RISK ASSESSMENT PROCEDURE		
OHS ROLES & RESPONSIBILITIES & STATUTORY APPOINTMENTS	240-62582234	
INTEGRATED RISK MANAGEMENT STANDARD	32-391	
ENVIRONMENTAL STRATEGY	240-82410629	

KUSILE PS I&A REGISTER AND OBJECTIVES & TARGETS	203-101465	
SHE RECORDS MANAGEMENT WORK INSTRUCTION	203-7188	
SAFE STORAGE OF HAZ CHEM SUBSTANCES ON SITE	203-10958	
HAZ CHEM SUBSTANCES MANAGEMENT WORK INSTRUCTION /PROCEDURE	203-10957	
PARTICIPATION & CONSULTATION WORK INSTRUCTION	203-6739	
DOCUMENT MANAGEMENT	203-746	
ENVIRONMENTAL ASPECTS AND IMPACTS WORK INSTRUCTION	203-42328	02
OCCUPATIONAL HYGIENE MONITORING AND MANAGEMENT MANUAL	203-32426	
OHS RISK ASSESSMENT PROCEDURE	32-520	
KUSILE PROJECT RECORDS CONTROL WORK INSTRUCTION	240-124499000	
KUSILE PROJECT DOCUMENT MANAGEMENT WORK INSTRUCTION	240-124499452	
KUSILE PROJECT DOCUMENT HANDOVER SPECIFICATION	240-128515850	01
Water Use Licence (Stream Diversion Crossing) where applicable; S21 (C&I) CTLF Stream diversion Crossing	04-B20F-BCEGI-2016-02-26	
Code of Practice for Environmental Management Systems (EMS)	ISO 14001:2015	
International Standard – Quality Management Systems – Requirements	ISO 9001:2015	
SHE Roles Resources and Authority Work Instruction	203-7187	
Instrument Cable Code	0.00_2713	
Standard Power and Control Cable Code	0.00_1310	
Earthling and Lightning Protection	240-56356396	
Lighting and Small Power Installation	240-55714363	
Requirements for Control and Power Cables for Power Stations Standard	240-56227443	
Panel Assemblies sheet 1	0.90_3928	
Panel Assemblies sheet 2	0.90_3928	
Panel Layout	0.90_3929	
Junction Box and Cable Termination	FIIS 2	
Splitter Boxes	FIIS 12	
Electrical Actuator Specification	FIIS 28	
Plant Safety Regulations	GGR 0992	

Requirements for Control and Power Cables for Power station...	240-56227443	
Abbreviation Standards for Labelling Rev 2	GGSS0443	
Switchgear Specification Rev 4	GGSS0456_LV	
Low Voltage PVC Cable Insulation Testing Technical Instruction	474-11168	
<u>Power Station General Drawings:</u>		
Lug Terminals Combinations	0.66_55053	
Earth Stud Adaptor Plate	0.54-393-t13-0-	
Basic Earthing Arrangements in Comms Room	0.54-393-T11-0-	
Earthing Standards – HV Yard Auxiliary Transformer	0.54-393-t10-1-	
Earthing Standards – Earthing of Surge Arresters with Discharge Counter	0.54-393-t9-2-	
Earthing Standards – Earthing of Surge Arresters with Discharge Counter	0.54-393-t8-1-	
Earthing Standards – Galvanised and Painted Tanks, Mounted on Earthed Steelwork with Carrier Coupling Equipment (LME)	0.54-393-t7-1-	
Earthing Standards – Galvanised and Painted Tanks, Mounted on Earthed Steelwork with Carrier Coupling Equipment (LME)	0.54-393-t6-1-	
Earthing Standards – Neutrals of Equipment Mounted on Earthed Steelwork	0.54-393-t5-1-	
Earthing Standards – Earthing Switches	0.54-393-t4-2-	
Earthing Standards – Isolator with Two Earthing Blades	0.54-393-t3-2-	
Earthing Standards – Isolator with One Earthing Blades	0.54-393-t2-2-	
Earthing Standards – Isolator without Earthing Blades	0.54-393-t1-2-	
Earthing Standards – Earthing of Smaller 3 Phase Consumers without Neutral with a 4 Core Unarmoured Cable	0.54-393-p9-0-	
Earthing Standards – Earthing of Signal Distribution Frames	0.54-393-p8-0-	
Earthing Standards – Power Station Auxiliary Bay Signal Earth Termination Box	0.54-393-p7-0-	
Earthing Standards – Control Equipment and Motor Starters	0.54-393-p6-0-	
Earthing Standards – Control Equipment and Motor Starters	0.54-393-p5-1-	
Earthing Standards – Motors fed by MICC, Conduit or Pilcswa Cables Mounted on Unearthed Material	0.54-393-p4-0-	
Earthing Standards – Motors fed by MICC, Conduit or Pilcswa Cables Mounted on Earthed Material	0.54-393-p3-0-	
Earthing Standards – Motors fed by XLPE or Thermoplastic Insulated Cables	0.54-393-p2-2-	
Earthing Standards – Oil Type and Dry Type Auxiliary Transformers in Power	0.54-393-p1-2-	

Stations		
Earthing Standards – Earthing of Steel Structures	0.54-393-c31-0-	
Earthing Standards – Earthing of Electrical Enclosures	0.54-393-c30-0-	
Earthing Standards – Earthing of Process Control Computers	0.54-393-c29-0-	
Earthing Standards – Earthing of Telephone or Process Control Cables	0.54-393-c28-0-	
Earthing Standards – Typical Layout of Substation showing required Earthing Connections	0.54-393-c27-0-	
Earthing Standards – Bolted Connection between 50 x 3MM CU Strap and 2 x 10MM dia CU Rods	0.54-393-c26-0-	
Earthing Standards – Typical Transformer and S.A. Earthing	0.54-393-c25-1-	
Earthing Standards – Armoured Telephone and Screened Control Cables at Junction Box Outgoing Cables	0.54-393-c24-1-	
Earthing Standards – Gland Plates	0.54-393-c23-1-	
Earthing Standards – Armoured Multicore Control, Telephone and Power Cables	0.54-393-c22-1-	
Earthing Standards – Switchboards (with paper insulated cables)	0.54-393-c21-0-	
Earthing Standards – Switchboards (with thermoplastic insulated cables)	0.54-393-c20-1-	
Earthing Standards – All Single Core Cable Sealing Ends	0.54-393-c19-0-	
Earthing Standards – Galvanised Tanks, Bases etc. of Equipment Mounted on Earthed Steelworks	0.54-393-c18-1-	
Earthing Standards – Painted Tanks, Bases etc. of Equipment Mounted on Earthed Steelworks	0.54-393-c17-1-	
Earthing Standards – Tanks, Bases, etc. and Neutrals of all Equipment Mounted on Unearthed Material	0.54-393-c16-1-	
Earthing Standards – Fence Earthing, Woodpole with Galvanised Wire Fence	0.54-393-c15-0-	
Earthing Standards – Safety Fence Earthing, Concrete Posts with Aluminium Fire Fence	0.54-393-c14-2-	
Earthing Standards – Safety Fence Earthing	0.54-393-c13-2-	
Earthing Standards – Method of Earthing Aluminium or Galvanised Steel Cladding	0.54-393-c12-0-	
Earthing Standards – Typical Earth Mat Connection to Column and Tail for Equipment Earthing	0.54-393-c11-3-	
Earthing Standards – Earth Strap Fixing-detail “A”	0.54-393-c10-1-	
Earthing Standards – Bolted Joints	0.54-393-c9-1-	
Earthing Standards – Saddle for 2x10MM dia, Earthing CU Rods	0.54-393-c8-0-	

Earthing Standards – Earthtail Clamp (typical applications)	0.54-393-c7-2-	
Earthing Standards – Earthtail Clamping Plate	0.54-393-c6a-0-	
Earthing Standards – Earthtail Clamp	0.54-393-c6-1-	
Earthing Standards – Brazed Copper Joints / Crimped Joints	0.54-393-c5-4-	
Earthing Standards – Copper Crimpet	0.54-393-c4-3-	
Earthing Standards – Earth Mat and Tails	0.54-393-c3b-2-	
Earthing Standards – Earth Mat and Tails	0.54-393-c3a-3-	
Earthing Standards – Earth Mat and Tails	0.54-393-c3-5-	
Earthing Standards – Earth Mat and Tails	0.54-393-c2-5-	
Earthing Standards – Earth Mat and Tails	0.54-393-c1-6-	
Earthing Standards – Isolator without Earthing Blades	0.54-393-16-0-	
Earthing Standards	0.54-393-0-20-	