NEC3 Engineering & Construction Contract

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

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

for **Replacement of Traditional Lights at Kusile Power Station for a Period of 9 Months**

Contents:		**No of pages**
Part C1	**Agreements & Contract Data**	
Part C2	**Pricing Data**	
Part C3	**Scope of Work**	
Part C4	**Site Information**	

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

Part C1: Agreements & Contract Data

Contents: **No of pages**

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:

Replacement of Traditional Lights at Kusile Power Station for A Period Of 9 Months

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

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

Options B	The offered total of the Prices exclusive of VAT is	**R**
	Sub total	**R**
	Value Added Tax @ 15% is	**R**
	The offered total of the amount due inclusive of VAT is[1]	**R**
	(in words)	

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

Signature(s) .....

Name(s) .....

Capacity .....

For the tenderer: .....

(Insert name and address of organisation)

Name & signature of witness .....

Date .....

Tenderer's CIDB registration number (if applicable) .....

[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*.

Acceptance

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

The terms of the contract, are contained in:

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

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

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

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

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

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

Signature(s) .....

Name(s) .....

Capacity .....

for the Employer

.....
(Insert name and address of organisation)

Name & signature of witness .....

Date .....

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

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

Note:

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

No.	Subject	Details
1		
2		
3		
4		
5		
6		
7		

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

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

	For the tenderer:	**For the Employer**
Signature		
Name		
Capacity		
On behalf of	*(Insert name and address of organisation)*	*(Insert name and address of organisation)*
Name & signature of witness		
Date		

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

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

Clause	Statement	Data
1	**General**	
	The *conditions of contract* 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	
		X2 Changes in the law
		X7: Delay damages
		X16: Retention
		X18: Limitation of liability
		Z: *Additional conditions of contract*
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The *Employer* 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 *Project Manager* is: (Name)	**Refilwe Mosadi**
	Address	**R545 Kendal/Balmoral Road Haartebeesfontein Farm Witbank**
	Tel	**[•]**
	Fax	**[•]**
	e-mail	**MosadiRM@eskom.co.za**
10.1	The *Supervisor* is: (Name)	**[•]**
	Address	**[•]**
	Tel No.	**[•]**

	Fax No.	**[•]**
	e-mail	**[•]**
11.2(13)	The *works* are	**Replacement Of Traditional Lights at Kusile Power Station for a period of 4 months**
11.2(14)	The following matters will be included in the Risk Register	**Labour and Community Strike/ Unrest. Weather Condition. Working at height. Risk Identification and assessment meeting to be held subsequent to contract award and risk register compiled and managed**
11.2(15)	The *boundaries of the site* are	**Kusile Power Station**
11.2(16)	The Site Information is in	**Part 4: 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 *law of the contract* is the law of	**the Republic of South Africa**
13.1	The *language of this contract* is	**English**
13.3	The *period for reply* is	**1 week**
2	**The *Contractor's* main responsibilities**	**Data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.**
3	**Time**	
11.2(3)	The *completion date* for the whole of the *works* is	**TBC**
11.2(9)	The *key date*s and the *condition*s to be met are:	***Condition* to be met** / ***key date*** **1** **Site Possession** / **21 September 2026**
30.1	The *access dates* are:	**Part of the Site** / **Date** **1** **Kusile Power Station** / **1 x week post Contract Award**
31.1	The *Contractor* is to submit a first programme for acceptance within	**2 weeks of the Contract Date.**
31.2	The *starting date* is	
32.2	The *Contractor* submits revised programmes at intervals no longer than	**2 weeks**
35.1	The *Employer* is not willing to take over the *works* before the Completion Date.	
4	**Testing and Defects**	
42.2	The *defects date* is	**52 weeks after Completion of the whole of the**

		***works*.**
43.2	The *defect correction period* is	**1 weeks**
5	**Payment**	
50.1	The *assessment interval* is	**Between the 25 day of each successive month.**
51.1	The *currency of this contract* is the	**South African Rand.**
51.2	The period within which payments are made is	**60 Days**
51.4	The *interest rate* is	**the publicly quoted prime rate of interest (calculated on a 365 day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands and** **(ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted *mutatis mutandis* every 6 months thereafter and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove.**
6	**Compensation events**	
60.1(13)	The place where weather is to be recorded is:	**Emalahleni Weather Station**
	The *weather measurements* to be recorded for each calendar month are,	**the cumulative rainfall (mm)** **the number of days with rainfall more than 10 mm** **the number of days with minimum air temperature less than 0 degrees Celsius** **the number of days with snow lying at 09:00 hours South African Time** **and these measurements:**
	The *weather measurements* are supplied by	**South African Weather Bureau**
	The *weather data* are the records of past	

	weather measurements for each calendar month which were recorded at:	**Emalahleni**
	and which are available from:	**the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer***
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 *Employer*'s risks	**1. Damage to the Employer's Property**
9	**Termination**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
10	**Data for main Option clause**	
B	**Priced contract with bill of quantities**	
60.6	**The method of measurement is**	**Option B and amended as stated in Part C2.1, Pricing Assumptions.**
11	**Data for Option W1**	
W1.1	**The Adjudicator 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**
	Address	**[•]**
	Tel No.	**[•]**
	Fax No.	**[•]**
	e-mail	**[•]**
W1.2(3)	**The Adjudicator nominating body 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 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.**

	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**	
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 (but not if Option X5 is also used)**	
X7.1	Delay damages for Completion of the whole of the *works* are	**0,5% per day for the work not done up to the maximum of 10% of the contract value**
X15	**Limitation of the *Contractor*'s liability for his design to reasonable skill & care**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**
X16	**Retention**	
X16.1	The *retention free amount* is The *retention percentage* is	**N/A** **5% of each invoice value, 50% to be released on completion of the works and the remaining 50% will be released after defects period.**
X18	**Limitation of liability**	
X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to:	**R0.0 (zero Rand)**
X18.2	For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to:	**the amount of the deductibles relevant to the event**
X18.3	The *Contractor*'s liability for Defects due to his design which are not listed on the Defects Certificate is limited to	**The greater of** • **the total of the Prices at the Contract Date and** • **the amounts excluded and unrecoverable from the *Employer*'s 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 *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	**the total of the Prices other than for the additional excluded matters.** **The *Contractor's* total liability for the additional excluded matters is not limited.** **The additional excluded matters are amounts**

		for which the *Contractor* is liable under this contract for • **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 *works*, Plant and Materials),** • **death of or injury to a person and** • **infringement of an intellectual property right.**
X18.5	The *end of liability date* is	**(i) 3 years after the *defects date* for latent Defects and** **(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.** **A latent Defect is a Defect which would not have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period. If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.**
Z	**The *Additional conditions of contract* are**	**Z1 to Z15 always apply.**

Z1 Cession delegation and assignment

Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer.*

Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

Z2 Joint ventures

Z2.1 If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the *Employer* for the performance of this contract.

Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.

Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other

unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

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

Z3.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor*'s B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.

Z3.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.

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

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

Z4 Confidentiality

Z4.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.

Z4.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Project Manager*.

Z4.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.

Z4.4 The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.

Z4.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

Z5 Waiver and estoppel: Add to core clause 12.3:

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

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

Z6.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*:

- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site;
- warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
- undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z6.2 The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

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

Z7.1 Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer*'s procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.

Z7.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.

Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer*'s VAT number 4740101508 on each invoice he submits for payment.

Z8 Notifying compensation events

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

Z9 *Employer's* limitation of liability

Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)

Z9.2 The *Contractor*'s entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Employer*'s liability under the indemnity is limited.

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

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

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

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

Z12 Ethics

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

Affected Party means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,

Coercive Action means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,

Collusive Action means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,

Committing Party means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,

Corrupt Action means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,

Fraudulent Action means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,

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

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

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

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

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

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

Z13 Insurance

Z 13.1 Replace core clause 84 with the following:

Insurance cover 84

84.1 When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.

84.2 The *Contractor* provides the insurances stated in the Insurance Table A.

84.3 The insurances provide cover for events which are at the *Contractor*'s risk from the *starting date* until the earlier of Completion and the date of the termination certificate.

INSURANCE TABLE A

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

Z 13.2 Replace core clause 87 with the following:
The *Employer* provides the insurances stated in the Insurance Table B.

INSURANCE TABLE B

Insurance against or name of policy	Minimum amount of cover or minimum l 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

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 *Employer*'s Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.

SANAS means the South African National Accreditation System.

TWA means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

Z15.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

Z15.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are effected by an independent, competent, and certified occupational hygiene inspection body, i.e. a SANAS accredited and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor*'s expense. For the purposes of compliance the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z15.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z15.3 The *Employer* manages asbestos and ACM according to the Standard.

Z15.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented and relevant air monitoring conducted in order to declare the area safe.

Z15.5 The *Contractor*'s personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

Z15.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.

Z15.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos contractor, instructed by the *Employer* at the *Employer*'s expense, and conducted in line with South African legislation.

C1.2 Contract Data

Part two - Data provided by the *Contractor*

[Instructions to the contract compiler: (delete this notes before issue to tenderers with an enquiry) Whenever a cell is shaded in the left hand column it denotes this data is optional. If not required select and delete the whole row, otherwise insert the required Data.]

Notes to a tendering contractor:

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

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

Clause	Statement	Data
10.1	The *Contractor* is (Name): Address Tel No. Fax No.	
11.2(8)	The *direct fee percentage* is The *subcontracted fee percentage* is	**%** **%**
11.2(18)	The *working areas* are the Site and	
24.1	The *Contractor's* key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: Experience:	

[1] Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see www.ecs.co.za

		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .
11.2(3)	The *completion date* for the whole of the *works* is	
11.2(14)	The following matters will be included in the Risk Register	
11.2(19)	The Works Information for the *Contractor*'s design is in:	
31.1	The programme identified in the Contract Data is	
B	**Priced contract with bill of quantities**	
11.2(21) 11.2(31)	The *bill of quantities* is in The tendered total of the Prices is	**(in figures)** **(in words), excluding VAT**
	Data for Schedules of Cost Components	*Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).*
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	**Minus %**

22 in SSCC	The rates of other Equipment are:	**Equipment**	**Size or capacity**	**Rate**

61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are **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**	**Hourly rate**

62 in SSCC	The percentage for design overheads is	%
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:	

PART 2: PRICING DATA
ECC3 Option B

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option B	3
C2.2	The *bill of quantities*	5

C2.1 Pricing assumptions: Option B

1. How work is priced and assessed for payment

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

Identified and defined terms 11 11.2

(21) The Bill of Quantities is the *bill of quantities* as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.

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

- the quantity of the work which the *Contractor* has completed for each item in the Bill of Quantities multiplied by the rate and
- a proportion of each lump sum which is the proportion of the work covered by the item which the *Contractor* has completed.

Completed work is work without Defects which would either delay or be covered by immediately following work.

(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

2. Function of the Bill of Quantities

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

3. Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

There is no general provision in Option B for payment for materials on Site before incorporation into the *works*. If secondary Option X14 Advanced payment has not been used then the tendering contractor may obtain the same effect by inserting appropriate items in the method related charges where the *method of measurement* allows, or alternatively making allowance in the rates of the *bill of quantities* for the financing of Plant and Materials until they are incorporated in the *works*.

When compensation events arise, the default position is that the Bill of Quantities is not used to calculate the cost effect of the event. Defined Cost and the resulting Fee is used and Defined Cost includes all components of cost which the *Contractor* is likely to incur, including so called P & G items. Rates and lump sums from the Bill of Quantities, or from any other source, may be used instead of Defined Cost and the Fee only if the *Contractor* and *Project Manager* agree. If they are unable to agree, then Defined Cost

plus Fee is used.

4. Measurement and payment

4.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

Abbreviation	Unit
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
l	litre
m	metre
mm	millimetre
m^2	square metre
m^2-pass	square metre pass
m^3	cubic metre
m^3-km	cubic metre-kilometre
MN	meganewton
MN.m	meganewton-metre
MPa	megapascal
No.	number
sum	Lump sum
t	tonne (1000kg)

4.2. General assumptions

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

4.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.

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

4.2.4. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due.

4.2.5. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. Detail regarding the extent of the work entailed under each item is provided in the Works Information.

4.3. Departures from the *method of measurement*

4.3.1.

4.4. Amplification of or assumptions about measurement items

The following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.

C2.2 the *bill of quantities*

ITEM NO.	DESCRIPTION	UNIT	NO. OFF	QTY	RATE	AMOUNT
	ITEM 1					
1	**PRELIMINARIES AND GENERAL**					
	-					
1.1.1	**Site Establishment & Facilities**					
1.1.1.1	Site Establishment for: Delivery of Office Converted Container Insulated, with Air-Con (L-9m; W-3m)	Once Off	1	1		
1.1.1.2	Site Establishment for: Delivery of Kitchen Converted Container Fitted with Single Bowl Sink with a Work Top, Fitted with Undercounter Cupboard L-12m; W-3m	Once Off	1	4		
1.1.1.3	Site Establishment for: Delivery of Storage Container, Enclosed with No Windows L-12m; W-2.5m	Once Off	1	3		
1.1.1.4	Site Establishment for: Delivery of Split Male and Female Ablution L-9m; W-3m	Once Off	1	1		
1.1.1.5	Supply and connection of power supply to Containers/Parkhomes	m	1	100		
1.1.1.6	Supply and connection of temporary water supply inlcuding, piping, pump, tap and storage tank (10000Lt water tank, food grade LLDPE plastics) adjacent contractor camp	Once Off	1	1		
1.1.1.7	Supply and connection of temporary waste water system, including, piping and plastic under-ground septic tank (12500 litres) typical for 1 to 55 people use	Once Off	1	2		
1.1.1.8	Supply and Installation of Site Fencing (1.8m High Diamond Mesh wire, 40 Steel Poles, 2 way double swing gate)	m	1	200		
1.1.1.9	Site Establishment for: Delivery of Cherry Picker 24m (2 Off)	Once Off	1	2		
1.1.1.10	Site Establishment for: Delivery of Cherry Picker 42m (1 Off)	Once Off	1	1		
1.1.2	**Site Clearance at Contractors Camp**					
1.1.2.1	Site Establishment for: Delivery of TLB - 4 X 4 Backhoe Loader (1 Off)	Once Off	1	1		
1.1.2.2	Site De-Establishment for: Collection of TLB - 4 X 4 Backhoe Loader (1 Off)	Once Off	1	1		
1.1.2.3	TLB - 4 X 4 Backhoe Loader	Per Day	1	1		
1.1.3	**Site De-establishment**					
1.1.3.1	Site De-establishment for: Collection of Office Converted Container Insulated, with Air-Con (L-9m; W-3m)	Once Off	1	1		

1.1.3.2	Site De-establishment for: Collection of Kitchen Converted Container Fitted with Single Bowl Sink with a Work Top, Fitted with Undercounter Cupboard L-12m; W-3m	Once Off	1	4	
1.1.3.3	Site De-establishment for: Collection of Storage Container, Enclosed with No Windows L-12m; W-2.5m	Once Off	1	3	
1.1.3.4	Site De-establishment for: Collection of Split Male and Female Ablution L-9m; W-3m	Once Off	1	1	
1.1.3.5	Disconnection and Collection of power supply to Containers/Parkhomes	m	1	100	
1.1.3.6	Collect and disconnection of temporary water supply inlcuding, piping, tap and storage tank (10000Lt water tank, food grade LLDPE plastics) adjacent contractor camp	Once Off	1	1	
1.1.3.7	Collect and disconnection of temporary waste water system, including, piping and plastic under-ground septic tank (12500 litres) typical for 1 to 55 people use	Once Off	1	2	
1.1.3.8	Removal and Collection of Site Fencing (1.8m High Diamond Mesh wire, 40 Steel Poles, 2 way double swing gate)	m	1	200	
1.1.2.2	Site De-Establishment for: Collection of Cherry Picker 24m (2 Off)	Once Off	1	2	
1.1.2.3	Site De-Establishment for: Collection of Cherry Picker 42m (1 Off)	Once Off	1	1	
1.2	**Health and Safety Complaince**				
1.2.1	**Personal Protective Equipment**				
1.2.1.1	Overall Trouser	Per Person	2	120	
1.2.1.2	Overall Jacket	Per Person	2	120	
1.2.1.3	Arc Flash Jacket	Per Person	2	101	
1.2.1.4	Arc Flash Trouser	Per Person	2	101	
1.2.1.5	Under Garment for Arc Flash	Per Person	2	101	
1.2.1.6	Safety Boots	Per Person	2	120	
1.2.1.7	Hardhat	Per Person	2	120	
1.2.1.8	Reflector Vest	Per Person	2	120	
1.2.1.9	Mask (Box of 20)	Box	17	120	
1.2.1.10	Safety Gloves	Yearly	18	120	
1.2.1.11	Safety Glasses	Yearly	9	120	
1.2.1.12	Ear Protection	Yearly	18	120	
1.2.1.13	Dust Overralls	Yearly	36	101	
1.2.2	**Medicals, Security and Safety Complaince**				

1.2.2.1	Safety file	Once Off	1	1		
1.2.2.2	Medicals - Entry	Per Person	1	120		
1.2.2.3	Medicals - Exit	Per Person	1	120		
1.2.2.4	Police Clearance Certification	Per Person	1	120		
1.2.3	**Safety Trainings and Competency**					
1.2.3.1	Training (Working at heights) (Valid for 3 years)	Per Person	1	104		
1.2.3.2	Training (Confined Spaces) (Valid for 3 years)	Per Person	1	104		
1.2.3.3	First Aid (Valid for 3 years)	No	1	3		
1.2.3.4	Basic Fire Fighting (Valid for 2 years)	No	1	5		
1.2.3.5	OHS Act (Valid for 2 years)	No	1	5		
1.2.3.6	Legal Liability (Once Off) (2 Off)	No	1	5		
1.2.3.7	Supervisory Safety (Valid for 2 years) (2 Off)	No	1	5		
1.2.3.8	Planned Job Observation (Once Off)	No	1	5		
1.2.3.9	HIRA (Valid for 2 years))	No	1	6		
1.2.3.10	Incident Investigator (Valid for 2 years)	No	1	6		
1.2.3.11	Evacuation Warden (Valid for 2 years)	No	1	5		
1.2.4	**Occupational Hygiene Surveys (All Areas)**					
1.2.4.1	Illumination for Office, Kitchen, Ablution and Storage Containers (valid for 2 years)	No	1	9		
1.2.4.2	Indoor Air Quality for Office container (valid for 2 years)	No	1	1		
1.2.4.3	Ergonomics (valid for 2 years)	No	1	1		
1.2.4.4	Personal Airborne Pollutant Sampling, (including Silica, welding fumes and non-ionizing radiation as part of Occupational Hyigiene Health Risk assessment) (Plant -All Units) (valid for 2 years)	No	1	1		
1.2.5	**Equipment**					
1.2.5.1	Fire Extingisher (9 Kg)	No	1	9		
1.2.5.2	Multi Gas Monitors (5 sensor- O2,H2S,CO,LEL,CO2)	No	1	5		
1.2.6	**Temporary Site Facilities**					
1.2.6.1	Office Converted Container Insulated, with Air-Con. L-9m; W-3m	Per Month	1	9		
1.2.6.2	Kitchen Converted Container Fitted with Single Bowl Sink with a Work top, Fitted with Undercounter Cupboard L-12m; W-3m	Per Month	4	9		

1.2.6.3	Storage Container, Enclosed with No Windows L-12m; W-2.5m	Per Month	3	9		
1.2.6.4	Split Male and Female Ablution Container L-9m; W-3m	Per Month	2	9		
1.2.7	**Transport and Logistics**					
1.2.7.1	22 Seater (5 Off)	Per Month	5	9		
1.2.7.2	LDV Site Bakie 4 x 4 Double Cab (6 Off)	Per Month	6	9		
1.2.7.3	Cherry Picker - 24m	Per Month	2	8		
1.2.7.4	Cherry Picker - 42m	Per Month	1	1		
	Total Item 1 (Preliminaries and General) Carried to Final Summary					
	ITEM 2					
2	**RESOURCES**					
	-					
2.1	**NORMAL TIME**					
	-					
2.1.1	Master Installation Electrican - MIE (Min 3 Year of Experience) (1 Off)	Hours	1.00	1476.00		
2.1.2	Site Manager (Min 1 Years of Experience) (1 Off)	Hours	1.00	1476.00		
2.1.3	Supervisor (Min 1 Years of Experience) (4 Off)	Hours	4.00	1476.00		
2.1.4	Electricians (Min 3 Year of Experience) (48 Off)	Hours	48.00	1476.00		
2.1.5	Safety Officer (Min 1 Year of Experience) (1 Off)	Hours	1.00	1476.00		
2.1.6	Quality Officer (Min 2 Years of Experience) (1 Off)	Hours	1.00	1476.00		
2.1.7	Semi-skilled (Min 1 Year of Experience) (48 Off)	Hours	48.00	1476.00		
2.1.8	Storeman (Min 1 Year of Experience) (1 Off)	Hours	1.00	1476.00		
2.1.9	Admin (Min 1 Year of Experience) (1 Off)	Hours	1.00	1476.00		
2.1.10	Cleaners (Min 1 Years of Experience) (2 Off)	Hours	2.00	1476.00		
2.1.11	SHE Rep (Min 2 Years of Experience) (4 Off)	Hours	4.00	1476.00		
2.1.12	Drivers (Min 1 Years of Experience) (5 Off)	Hours	5.00	1476.00		
2.1.13	Operator (Min 1 Years of Experience) (3 Off)	Hours	3.00	1476.00		
	Subtotal Item 2 (Resources) carried to Final Summary					

	ITEM 3					
3	**TOOLS AND EQUIPMENT**					
3.1.1	Electrical Toolbox (19 Piece including Muilti-Meter T85D and TP200)	Each	1.00	48.00		
3.1.2	Cordless battery drill with extra battery -18V Brushless, 5.0Ah Li-ion batteries, charger, carry case, minimum 65Nm torque	Each	1.00	24.00		
3.1.3	115mm Cordless Angle Grinders -18V Brushless, 115mm disc, 5.0Ah batteries	Each	1.00	12.00		
3.1.4	1200w Hammer/Electric drills - 220V Rotary Hammer, SDS Plus, 1200W, drilling capacity 26–32mm concrete	Each	1.00	6.00		
3.1.5	30m Complete Extensions Reel - Industrial rubber cable, 3-core 2.5mm², IP44, overload protection, 16A	Each	1.00	12.00		
3.1.6	8 Step Fibre Glass Stepladders	Each	1.00	12.00		
3.1.7	10 Step Fibre Glass Stepladders	Each	1.00	8.00		
3.1.8	12 Step Fibre Glass Stepladders	Each	1.00	2.00		
3.1.9	Fluke 177 Tester with calibration certificates	Each	1.00	2.00		
3.1.10	Luminance testers with calibration certificates	Each	1.00	2.00		
	Subtotal Item 3 (Tools and Equipment) carried to Final Summary					
	ITEM 4					
4	**CONSUMABLES**					
4.1	No. 00 Glands	Each	1.00	22850.00		
4.2	Round knock out galv boxes with lid and screws	Each	1.00	22850.00		
4.3	Connector Blocks 2.5mm 3 Wire 3 Way	Each	1.00	22850.00		
4.4	M8 spring washers + 8M x 30mm Bolts and Nuts	Each	1.00	22850.00		
4.5	Drill bits, Cable ties, Q20 & General consumables	Each	1.00	22850.00		
	Subtotal Item 4 (Consumables) carried to Final Summary					
	ITEM 5					
5	**REPLACEMENT LIGHTS**					
5.1	70W LED Bulkhead (Mag44 retrofit panel and modules) Replacement for 100W HPS Bulkhead Light	Each	1.00	12000.00		
5.2	600 x 600mm LED Panel Light replacement for 2ft Fluorescent 24W Tubes	Each	1.00	3600.00		
5.3	150W LED High Bay replacement for 400W High Bay Light	Each	1.00	600.00		
5.4	280W LED High Bay replacement for 600W High Bay Light	Each	1.00	400.00		

5.5	5 - 9W LED Bulb replacement for 9W Energy Saving Bulbs	Each	1.00	6000.00		
5.6	18W LED Tube replacement for 5ft Fluorescent Tubes	Each	1.00	250.00		
	Subtotal Item 5 (Replacement Lights) carried to Final Summary					
	ITEM 6					
	TESTING AND COMMISIONING SERVICES					
6.1	Testing of power on 230V systems and supply cable power and insulation resistance.	Sum	1.00	1.00		
6.2	Testing all installations to verify compliance with the illuminance requirements which are: Walkways: 100 lux Boiler equipment (valves, gauges, etc): 150 lux Turbine floor: 300 lux	Sum	1.00	1.00		
6.3	Commissioning of installed ligths	Sum	1.00	1.00		
	Subtotal Item 6 (Testing and Commissioning Services) carried to Final Summary					

	FINAL SUMMARY					
ITEM 1	PRELIMINARIES AND GENERAL					
ITEM 2	RESOURCES					
ITEM 3	TOOLS AND EQUIPMENT					
ITEM 4	CONSUMABLES					
ITEM 5	REPLACEMENT LIGHTS					
ITEM 6	TESTING AND COMMISIONING SERVICES					
	Final Summary Total					

PART 3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
C3.1	*Employer*'s Works Information	36
	Total number of pages	37

C3.1: EMPLOYER'S WORKS INFORMATION

Contents

1 Description of the *works*

1.1 Executive overview

This Scope of Work outlines the high-level scope for replacement of traditional lights with energy-efficient LED lighting solutions at Kusile Power Station. As part of the transition to more sustainable and cost-effective lighting systems, a key component of the project will include emergency LED replacements for critical areas that require continuous illumination during power outages.

There had been a concerning deterioration of lighting across the station where issues of frequent replacements, spares and maintenance capacity issues contributed greatly. That is due to short lifespan of the traditional lights and obsolescence were most light manufactures no longer produce traditional lights. This lighting upgrading project aims to provide reliable lighting solutions and ensuring compliance with safety regulations and supporting operational continuity.

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

The purpose of the Scope of Work is to clearly define the tasks, processes, and deliverables required for the successful replacement of traditional lighting systems with LED lighting at Kusile Power Station. This includes the installation of emergency LED fixtures to ensure continuous lighting during power outages.

1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	**Meaning given to the abbreviation**
HPS	High Pressure Sodium
IP	Ingress Protection
ITPL	Inspection and Test Plan List
kV	Kilovolts
LED	Light-emitting diode
m	Meters
mm	Milli-Meters
PPE	Personal Protective Equipment
QCP	Quality Control plan
SANS	South African National Standards
W	Watt

1.4 High-Level Scope of Work

This document describes the scope of work to be carried-out by the appointed contractor. The Scope only covers the following plant areas:

- Boiler Plant (Unit 1 to Unit 5) including PJFF and Flue Gas Ducts
- Turbine Plant (Unit 1 to Unit 5)
- Water Treatment Plant.
- FGD Recirculation Pumps House
- Compressor Houses (West and East)
- Diesel Generator house
- Aux Bay and the Offices

The High-Level Scope to be executed is as follows:

- Removal of traditional lights.
- Disposal, scraping and storage of traditional lights.
- Supply of LED lights
- Installation of LED lights
- Commissioning (Including testing, conduction lighting survey etc.)
- Providing datasheets and signed quality documentation (QCPs).

1.5 Detailed Scope of Work

1.5.1 Plant Description

There are different types of lights installed in different plant areas for different purposes and applications. Below are the types of lights installed per plant.

1.5.1.1 Types of Lights per plant

Light Description	Plant Areas
70W LED Bulkhead Replacement for 100W HPS Bulkhead Light	• Boiler and PJFF Plant • Turbine Plant • Compressor Plant • Water Treatment Plant
80-90W LED Floodlight Replacement for 150W HPS Floodlights	• Boiler and PJFF
600x600mm LED Panel Light replacement for 2ft Fluorescent 24W Tubes	• Admin Building • Aux Bay Offices
600x1200mm LED Panel Light replacement for 5ft Fluorescent 54W Tubes	• Aux Bay • Admin Building
4ft LED Light replacement for 4ft Fluorescent 54W Tubes	• Aux Bay
280W LED High Bay replacement for 600W High Bay Light	• Turbine Hall • Recirc Pump House • Diesel Generators House • Water Treatment Plant
5 - 9W LED Bulb replacement for 9W Energy Saving Bulbs	• Control Rooms • Aux Bay

Light Description	Plant Areas
	• Admin Buildings

1.5.2 General

a) The contractor takes full professional accountability and liability for all temporary works designs done by the Contractor.
b) Any discrepancy or ambiguity between the Employer's Specifications or requirements is immediately brought to the attention of the Project Manager for clarification.

1.5.3 Planning and Scheduling

- Develop phased installation plan to minimize disruptions to power station operations. Where necessary, schedule work during non-operational hours.
- Coordinate closely with operational teams to ensure adherence to safety protocols during the installation process.

1.5.4 Installation

- Remove existing traditional lighting fixtures across the station and ensure safe and environmentally compliant disposal, especially for hazardous materials like mercury in fluorescent bulbs.
- Install new LED fixtures, retrofit existing ones if necessary, and upgrade electrical infrastructure where needed.
- Test all installations to verify compliance with the design specifications, ensuring correct brightness levels and automatic switching through day-night switches.

1.5.5 Lights Replacements

Below is a list of direct LED replacements for various traditional lighting fixtures. These suggestions are based on typical lumen output and wattage equivalency, providing energy-efficient alternatives without compromising on lighting quality. For each category, the approximate wattages and types of LED fixtures considered for a one-to-one replacement are included.

Direct LED Replacement for 100W HPS Bulkhead Light

- Replacement LED: 70W LED Bulkhead (With 120^{o} beam angle)
- Lumen Output: 4000-6000 lumens
- Notes: LEDs in the 70W range can typically replace 100W HPS due to their higher efficiency, providing similar light levels with lower energy consumption. Look for fixtures with a colour temperature of around 3000K-4000K to match the warm light of HPS.

Direct LED Replacement for 2ft Fluorescent 24W Tubes

- Recommended LED Panel Light: 600x600mm LED Panel Light
- Wattage: 18W
- Lumen Output: 2,000-3,000 lumens
- Notes: A 600x600mm LED panel is ideal for replacing smaller 2ft fluorescent fixtures, offering improved light distribution and a cleaner aesthetic in commercial or office spaces. Panels are available in a range of colour temperatures, typically from 3000K to 6500K.

Direct LED Replacement for 5ft Fluorescent 54W Tubes

- Recommended LED Panel Light: 600x1200mm LED Panel Light
- Wattage: 36W

- Lumen Output: 4,000-5,500 lumens
- Notes: This size panel can replace multiple 5ft fluorescent tubes in larger areas, such as offices, hallways, or conference rooms, providing even, flicker-free light that enhances both visibility and comfort.

Direct LED Replacement for 400W High Bay Light

- Replacement LED: 150W LED High Bay (With 120° beam angle)
- Lumen Output: 15,000-20,000 lumens
- Notes: For replacing 400W high bay lights in industrial or warehouse settings, 150W LED high bay fixtures provide a direct energy-saving replacement. High bay LEDs offer superior lighting with options for different beam angles and colour temperatures.

Direct LED Replacement for 600W High Bay Light

- Replacement LED: 280W LED High Bay (With 120° beam angle)
- Lumen Output: 15,000-20,000 lumens
- Notes: For replacing 400W high bay lights in industrial or warehouse settings, 280W LED high bay fixtures provide a direct energy-saving replacement. High bay LEDs offer superior lighting with options for different beam angles and colour temperatures.

Direct LED Replacement for 9W Energy Saving Bulbs

- Replacement LED: 5 - 9W LED Bulb
- Lumen Output: 15,000-20,000 lumens

Direct LED Replacement for 5ft Fluorescent Tubes

- Replacement LED: 18W LED Tube
- Lumen Output: 1800-2200 lumens
- Notes: A 5-foot fluorescent tube (typically 36-40W) can be replaced by an 18W LED tube, providing similar brightness with reduced energy consumption. Make sure to choose the right colour temperature and whether it's a plug-and-play or ballast-bypass type.

Proper installation as per the above selections ensures that the lighting system operates effectively, providing uniform illumination and enhancing the overall aesthetic of the space. Ultimately, this leads to a more sustainable, reliable, and functional lighting solution at Kusile Power Station.

1.5.5.1 Hazardous Locations

Some of the plant areas within the scope of this project are classified as hazardous locations in terms of the Hazardous Locations Standard (240-56536505) and the Kusile Power Station Hazardous Location Maintenance Strategy (240-134613227). All lighting replacement work performed in these areas shall be carried out in accordance with the requirements of these documents and the Kusile Power Station Hazardous Locations Work Instruction (240-148595382).

The following plant areas included in this project contain classified hazardous locations (flammable-gas Zones 0, 1 and 2 and combustible-dust Zones 20, 21 and 22), as detailed in Appendix B of 240-134613227:

- Boiler Plant - fuel oil storage tanks, auxiliary boiler, LPG bulk tank and LPG pipeline, and the boiler house (coal bunkers, mill feeders and mill reject boxes).
- Turbine Plant - seal oil and stator cooling skids, gas cooling unit, generator casing and terminal box, and the hydrogen (H2) gas storage area.
- Battery Rooms - Aux Bay, Sub-South and SSB battery rooms.
- Coal Stockyard and Terrace Coal - conveyors, transfer houses and stacker/reclaimer areas.
- Sewage Treatment Plant - balance tank area.

All luminaires and associated electrical equipment installed in these areas shall be explosion-protected (Ex-rated) and certified for the relevant zone, gas group and/or dust group, temperature class, Equipment Protection Level (EPL) and ingress protection (IP) rating applicable to the location. Equipment shall be ATEX/IECEx certified and shall be selected, certified and installed in accordance with the Hazardous Locations Standard (240-56536505) and the applicable SANS standards, including SANS 10108, SANS 10086-1 and the SANS 60079 series. Type-test certificates, product certification documentation and apparatus markings shall be provided for all luminaires and equipment installed in hazardous locations.

On completion of any installation or modification in a hazardous location, a Hazardous Location Certificate of Compliance (HAZLOC CoC) shall be issued for the affected area. In accordance with 240-56536505 (clause 3.5.1) and 240-148595382 (clause 3.11), the HAZLOC CoC shall be issued by a registered Master Installation Electrician (MIE) who is trained and competent in hazardous locations, in terms of regulation 11(2) of the Electrical Installation Regulations under the Occupational Health and Safety Act. All personnel performing work in hazardous locations shall be HAZLOC trained and competent.

1.5.6 Number of Replacement Lights

Light Description	Quantity Estimates
70W LED Bulkhead (Mag44 retrofit panel and modules) Replacement for 100W HPS Bulkhead Light	12000
600x600mm LED Panel Light replacement for 2ft Fluorescent 24W Tubes	3600
150W LED High Bay replacement for 400W High Bay Light	600
280W LED High Bay replacement for 600W High Bay Light	400
5 - 9W LED Bulb replacement for 9W Energy Saving Bulbs	6000
18W LED Tube replacement for 5ft Fluorescent Tubes	250

1.5.7 Lighting Minimum Requirements

Light Sources to be installed through this project as per the above-mentioned type must be meet the following specifications and it must be noted that all light sources must comply with Schedule B attached in **Appendix A**.

1.5.7.1 Photometric Requirements

- The light colour shall be “Neutral White” (4000K).
- The colour rendering index shall be equal to or greater than 85.
- The luminaire efficacy shall be equal to or greater than 110 lm/W.
- The luminaire downward light output ratio (LOR) shall be equal to 100%.
- The luminaire shall reach its full brightness instantaneous.
- IES and/or LTD files for use with Relux must be supplied in electronic format.

1.5.7.2 Electrical Requirements

- Luminaire input voltage shall be 230V AC ±15%.
- Luminaire operating frequency shall be 50Hz ±5%.
- Luminaire efficiency shall be equal to or greater than 90%.
- Luminaire power factor shall be equal to or better than 0.95.
- Luminaire total harmonic distortion shall be equal to or less than 20%.
- All LED drivers shall be suitable for operation with the specified rating of the luminaire on a 230 VAC ± 10% 50Hz single-phase electrical power supply system.

1.5.7.3 Mechanical Requirements

- Luminaires shall be constructed from durable lightweight materials and shall be accompanied by comprehensive test reports certifying that the luminaires have successfully passed SANS 475.
- Luminaires shall be supplied complete with control gear and LED module.
- Diffusers / lenses shall not have external prisms that could accumulate dirt and dust, and thus reduce the light output of the luminaires. Diffusers shall be constructed in such a manner that the wall thickness of the material is maintained at a constant thickness, hence preventing the projection of lines of patterns onto the ground level.
- In case where luminaires are fitted with reflectors, the reflector shall be made of high-grade super pure deep anodized aluminium.
- LED drivers shall be fully housed within or fixed onto the body of the luminaire.
- The luminaire dimensions and weight shall be specified.
- The number of modules and LEDs per module shall be specified.
- The operating relative humidity range shall be 10% to 70%.

1.5.7.4 Guarantees

- Luminaire housing for a minimum period of ten (10) years.
- The electrical components for 30 000 operating hours (five years).
- The LED module for 30 000 operating hours (five years).

1.5.7.5 Documentation to be submitted.

- The following documentation must be submitted per luminaire offered:
- Proof of compliance to the SANS 60598-1 (by accredited laboratory)
- Proof of compliance to the SANS 475 (by accredited laboratory)
- Proof of compliance to the EN 55015 (by accredited laboratory)
- Completed technical Schedule B in Appendix 1.
- IES and/or LTD files supplied in electronic format.
- Proposed Relux simulation (electronic .RDF file)
- Photometric test reports per luminaire offered. (by reputable accredited laboratory)
- Luminaire guarantee certificate.
- Certificate indicating lead time for delivery from date of order.
- Luminaire maintenance strategy.
- No luminaire will be approved or tested if these test reports are not provided.

1.5.8 General Installation Guidelines

1.5.8.1 Safety Compliance

- Follow all relevant electrical codes and safety regulations during installation.
- Use appropriate personal protective equipment (PPE) and safety measures.

1.5.8.2 Documentation

- QCP and ITPL to be used for all the station lights and must be submitted to Engineering for review.
- Datasheets,
- Storage, packing and transportation instructions.
- Maintenance manual

1.5.8.3 Quality Assurance

The quality of the LED lighting installation at Kusile Power Station is critical to the overall success of the project. All LED fixtures must meet or exceed industry standards for energy efficiency, durability, and performance. The selected LED lights should be sourced from reputable manufacturers with proven reliability and compliance with international standards such as SANS, IEC, or equivalent certifications.

All LED lights to be installed must have their samples tested and approved by Eskom Research, Test and Development (RT&D) before they can be accepted for installation at Kusile Power Station.

Throughout the installation process, qualified personnel will ensure that all fixtures are properly mounted, connected, and tested for functionality, brightness, and consistency.

1.6 Roles and Responsibilities

a) Supplier shall comply with Eskom's policies and site regulations, adherence to Eskom's Life Saving Rules, adherence to Generation Occurrence Management Procedure, Smoking Policy, zero tolerance on alcohol usage, etc.

b) The successful Contractor shall utilise/provide skilled and suitably qualified staff with current experience in the following but not limited disciplines.

- Competent Person according to OHSAS Act
- Occupational Health and Safety Act 85 of 1993
- Quality Management Control and Assurance procedures
- Method Statement writing
- Plant lighting monitoring commissioning and (lighting survey

c) Supplier shall provide the handover package, signed, and accepted by the employer.

d) All staff brought onto site in connection with this SOW should be able to fluently speak, understand and write in English.

e) Ensures that throughout the duration of the contract, they conform and adhere to the safety, health, and environment regulations.

f) The supplier ensures that all staff brought to Kusile PS site have a valid fitness certificate based on the specified plant man-job specification.

g) The supplier shall be responsible or held liable for any defects arising from manufacturing, transportation, and handling.

1.6.1 Employer (Eskom):

a) Compile and submit scope of work with technical specifications.

b) Performs Quality Control on delivery at the Employer premises.

c) Liaise with all relevant stakeholders for any input.

d) Provide all necessary to ensure that the Works Information is in accordance with Eskom policies and procedures.

e) Arrange technical evaluation sessions.

f) Compile and present mandate to negotiate and arrange negotiation meetings when required and give feedback to relevant tender committee.

g) Keep record of all tender documentation.

1.6.2 Communication and Correspondence

Correspondences shall be written formally on the letter head format of the organisation and addressed to the relevant person.

a) All correspondence includes but not limited to:

i. Kusile Power Station
ii. Employer's Contract number
iii. Contract description
iv. Correspondence subject matter
v. Employer's name and contact details.
vi. Contractors contact details.
vii. Date

Where appropriate the correspondence includes the Employer's reference and is delivered as a single package or as per the agreed contract terms.

All communications from the Contractor are numbered sequentially with a prefix as advised by the Employer. The Employer responds in like manner. The prefix and numbering system are decided upon at the Inaugural meeting.

1.6.3 Quality and Documentation Control

a) During the tender process a quality criterion will be defined that the Contractor must comply to.

b) The Contractor shall ensure that any witness, hold, and inspection points are strictly adhered to.

c) All Quality References and Standards as stipulated in this document will be adhered to.

d) The Contractor to comply with the Employer's quality documentation management system and processes.

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:
Project Kick-off Meeting	1 x week post Contract Award	Kusile Power Station	Employer, Contractor and Others

Execution Progress Meeting	Bi- Weekly	Kusile Power Station	Employer, Contractor and Others
Risk register and compensation events	Bi- Weekly	Kusile Power Station	Employer, Contractor
Title and purpose	**Approximate time & interval**	**Location**	**Attendance by:**

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 contractual communication between the Employer and the Contractor shall be in the form of properly compiled letters or forms attached to e-mails and not as a message in the e-mail itself. All formal communication is via the Project Manager.

2.3 Health and safety risk management

The Contractor complies with the Occupational Health and Safety Act Number 85 of 1993 and its regulations, Employer's SHEQ Policy, Standards, Procedures, Guidelines, Specifications and Regulations.
The Contractor ensures safety awareness at all times through continuous training.

The Contractor must at all times be responsible for the supervision of his employees, agents and sub-Contractors, and takes full responsibility and accountability in ensuring that they are competent, compliant and aware of the legal requirements and other applicable requirements, and executes the works accordingly.

The Contractor ensures that all statutory appointments, and appointments required by any Employer's Policy, standard and Procedure, are recorded in writing and that all its appointees and/or agents fully understand their responsibilities and are trained and competent to execute their duties.

The Employer's Project Manager, or any person appointed by the Employer's Project Manager, may at any stage during the term of the contract:
Conduct health and safety audits by a competent person regarding all aspects of compliance with the SHEQ requirements, at any off-Site place of work, or the Site establishment of the Contractor.

Refuse any employee, sub-Contractor or agent of the Contractor access to the premises if such person has been found to commit an unsafe act or if any work is found not to be compliant or authorized.
Issue the Contractor with a STOP WORK ORDER should the Employer's Project Manager become aware of any unsafe working procedure or condition, or any non-compliance.
The Contractor immediately reports all incidents as well as any threat to safety and health of which the Contractor becomes aware at the Site, to the Employer's Project Manager.

The Contractor agrees that the Employer is relieved of any and all of its responsibilities and liabilities in terms of the Occupational Health and Safety Act no 85 of 1993 in respect of any acts or omissions of the Contractor, and the Contractor's employees, agents or sub-Contractors, to the extent permitted by the Occupational Health and Safety Act no 85 of 1993.

The Contractor provides a health and safety plan based on the Employer's Safety, Health and Environmental Specification.

All persons entering the Site must undergo the Employer's safety induction course.
The designer of the Works is mandated to comply with section 6 of the construction regulation 2014.

2.3.1 Safety of Worker

The Contractor is to ensure the safety of all persons working on the Site.
Any hot work, including welding, will be applied for in accordance with the permit to work system.
No hot work will be allowed on Site unless a hot work permit is granted in writing.
Precautions must be taken to prevent any objects, welding or grinding sparks from falling beyond the immediate working area.
Ear protection and all required PPE must be provided to all personnel by the Contractor.
The Contractor completes activity risk based assessments and provides the assessments to the Project Manager for acceptance before activities take place.

2.3.2 Fire Protection

The *Contractor* must ensure that his employees are trained in the use of firefighting apparatus.
The *Contractor* must take precautions to prevent any occurrence of fires or explosions while carrying out any work near flammable gas and liquid systems. Any tampering with the *Employer's* fire equipment is strictly forbidden. All exit doors, fire escape routes, walkways, stairways, stair landings and access to electrical distribution boards must be kept free of obstruction, and must not be used for work or storage at any time. Firefighting equipment must remain accessible at all times.

In case of a fire, the *Contractor* must immediately report the location and extent of the fire to the Electrical Operating Desk using the station's Emergency Number. The *Contractor* must take the necessary action to safeguard the area to prevent injury and spreading of the fire.

2.3.3 First aid

The *Contractor* provides First Aid services (level 2) to his employees and sub-*Contractor*s. In the case of severe or serious injury, to his employees and sub-*Contractor*s the *Employer's* Medical Centre and facilities will be made available and accessible to such persons.

2.3.4 Housekeeping

It is the *Contractors* responsibility to ensure that the Site is cleaned daily. All electrical cables and hoses are routed so as not to cross unprotected over floors and walkways. All equipment is packed neatly without interference to access. All excess scaffolding material is removed from Site after the scaffolding has been erected. The *Contractor* is responsible for the removal of any scrap material to the designated scrap area on a daily basis.

2.3.5 Barricading

Access to danger zones is restricted using handrail type guards at least 1.2 meters high and able to block access to the danger zone. Red tape is not allowed. Symbolic safety signs depicting 'Danger', name of Contractor, Responsible Supervisor, Contact details of supervisor and 'No entry' are attached to the guards. This includes access during the taking of X-rays.

2.3.6 Radiographic Examinations

When radiographic tests are carried out in the plant by Others, the danger area is evacuated with the exception only of authorized radiographic workers, and thereafter barricaded. To ensure that employees and contract staff working in Employer's premises are not exposed to more radiation than is reasonable level, the Contractor complies with the Kusile Power Station procedure 'Requirements and Rules for Radiation Protection and Safety of Radiation Sources'.

2.3.7 Permit to Work System

The *Contractor* allocates personnel to be trained and authorised as Responsible Persons according to *Employer's* Plant Safety Regulations (36-681). The *Contractor* ensures that adequate number of appointed Responsible Persons and Authorised Supervisors prior to the outage date or commencement of work at the station. The *Contractor* ensures that Responsible Persons and Authorised Supervisors are available on Site at all times during the execution of the Work.
If the *Contractor* breaches this obligation, the *Employer's Project Manager* withholds monthly payments until the *Contractor* complies with this obligation.

2.4 Environmental constraints and management

a) The contractor and or supplier shall have a documented and implemented environmental management system e.g. environmental policy, operational procedures relating to their activities, Environmental Aspects and Impacts Register.
b) The contractor and or supplier shall prepare an environmental management plan relating to their activities that will be carried out. The environmental management plan shall be based on, amongst others, Eskom Kusile Power Station's OEMP and any other applicable environmental legislation. The environmental management plan must include all the aspects and impacts relating to the activity and address the principle of continual improvement.
c) The contractor and or supplier employees shall attend induction on environmental management prior to commencement of work at Kusile Power Station.
d) The contractor and or supplier shall comply with all Eskom Kusile Power Station environmental requirements such as policies, standards and procedures.
e) The contractor shall appoint trained and competent personnel in writing, who will have the responsibilities of implementing all environmental requirements on a specific contract.
f) Non-conformance and All spills/emergency incidents shall be reported to Eskom Contract Manager and Environmental Officer(s) immediately on occurrence, such reports must include but not limited to the following information:
    a. The date and time of the incident
    b. The cause of the non-conformance/incident;
    c. The proposed actions to correct and prevent recurrence.
g) Eskom Kusile Power Station shall issue non-conformances where there are deviations from Eskom Kusile Power Station Procedures and any other environmental requirements, and the Contractor or Supplier shall be responsible to provide an action plan and close out of such non-conformances timeously.
h) Environmental Incident Investigations shall be done jointly where responsible managers and the environmental team from Eskom and the Eskom subsidiary or contractor are present.
i) Environmental Incident investigation shall be done in accordance to Eskom Environmental Incident Management Procedure (240-133087117).
j) The contractor or supplier shall be responsible to ensure duty of care during execution of work at Kusile Power Station and shall be liable for the costs for the costs of remedying pollution, *environmental degradation and consequent adverse health effects as indicated on the NEMA principles below:*

National Environmental Management Act 107 of 1998 (NEMA) principles:
• Duty of care and remediation of environmental damage

Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorized by law or cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment.

• Polluter Pays Principle

The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

a) The *Contractor* and or supplier shall allocate funds for the implementation of environmental requirements.

b) All contractors shall abide to Eskom Zero Liquid Effluent Discharge through the process of reuse and recycling.
c) All waste generated during the execution of the scope of work shall be managed in accordance with Kusile Power Station Waste Management Work Instruction (240-105776552) and in compliance with applicable environmental legislation and bylaws.
d) All contractors should be aware of Eskom SHEQ Policy.
e) All contractors must take into account environmental consideration when carrying out Risk Assessments.
f) All equipment used on site must be in good working condition and no fuel and/or oil leaks on any plant will be tolerated.

Records to be kept onsite for Environmental Management

The following minimum records shall be kept on sites:

a) Contractor site specific Environmental Management Plan and Environmental aspect and impact register.
Environmental aspect must be identified, and how they should be mitigated and also be communicated to employees. Proof of communication must be available

b) Environmental Incident registers and investigation reports.
Incident must be reported immediately or within 24 hours of occurrence, investigation must take place within 7 days and concluded with 30 days, lesson learned must be shared with employees. Record of environmental incidents must be made available.

c) Non-conformance register.
When non-conformances are closed, they should be investigated and close-out within the agreed timeframes.

d) Complaints register. Where complaints are raised they should be reported to Kusile Environmental management Department, be investigated and closed out.
e) Waste disposal register

f) Hazardous Substances registers and SDS where applicable.
Where hazardous substances are used, a register should be maintained and all SDS should be available and communicated to employees.

g) Records of audit reports and audit findings close-out, where applicable.
h) Records of audit and how findings where closed should be maintained.
i) Records of environmental inspections conducted.
Monthly environmental inspection should be conducted and records of inspections should be maintained.

j) Licences for Landfill sites/Waste Treatment plant for all waste streams generated and disposed by the contractor.

k) Registration certificate for a waste service provider appointed by the contractor
l) Safe disposal certificates or weighbridge certificates for all waste disposed.

Tender Submission Documentation

The following documentation shall be submitted with all tender submissions:
a) Environmental Policy
b) Aspect and impact register or an environmental management plan (relevant to the scope of work)
c) Environmental Management System Certificate (if certified) if not, an environmental management system manual or procedures
d) Waste Management Plan
e) Proof of training of persons performing activities that could have significant impact on the environment.

2.5 Quality assurance requirements

2.5.1 Quality Management

The quality requirements are as per ISO 9001:2008 and *Employer* Quality Standard, QM 58. This quality management philosophy is developed from the basis that manufacturers produce quality products, supervisor oversees the process, checks quality but liability for quality remains with the *Contractor*. The *Contractor* submits a QMS as a returnable schedule and uses it for all phases of the Project. The QMS complies with the requirements of ISO 9001:2008 standard. The *Contractor* provides evidence of a fully implemented QMS as and when requested by the *Project manager*.

The *Project Manager* may at his sole discretion carry out an audit on the *Contractor*, the *Contractor*'s suppliers and Sub-*Contractor*s
Quality control plans will be produced by the *Contractor* or manufacturer which will indicate the level of product quality control to be applied. The QCP must be aligned to, and reference ISO 10005:2005 QMS, guidelines for quality plans and in compliance with the guideline in 240-105658000. The CQP will make reference to the *Contractor's* QMS Procedures to be used in this Contract. This plan will be reviewed by the *Project Manager*. The project team monitors that these plans are being implemented and that it is yielding the expected results through process and product verifications.

High quality standards are also assured by conforming to the following:

a) The use of sound design and engineering principles,
b) The design process uses a good performance and functional specification,
c) It is ensured that the installation conforms to the Works Information.
d) Design Review Procedure is followed
e) Engineering Change Procedure
f) QA/QC on project (manufacturing, installation)

The *Contractor* submits the following documents within ten (10) working days of the Contract Date to the *Project Manager* for review and acceptance prior to the commencement of work:

a) The *Contractor's* QMS compliance with the requirements of ISO 9001:2008
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 Works Information

The *Contractor* supplies the *Project Manager* with a QCP or ITP for review and acceptance.

The *Contractor* supplies the *Project Manager* with a detailed contractor organogram showing the quality personnel to be used in the Contract. The *Contractor* provides CVs of the quality management employees who will be responsible for quality.
The *Contractor's* Quality Management employee's responsibilities include but are not limited to the following:

a) Implementation of the QMS
b) Administration of QA/QC systems
c) Verification of approval status of Sub-*Contractor*'s QCP and procedures
d) On-and -offsite inspections
e) Co-ordination, inspection and verification of the *Employer's* intervention points
f) Review of *Contractor* testing and inspection documents (procedures, test results)

- Reporting on quality performance

The requirement to submit these documents does not constitute a compensation event.

2.5.2 Quality Responsibility

a) The *Contractor* is accountable for the quality of the output and liable for any failures.

b) The *Contractor* is responsible for defining the level of intervention of QA/QC or inspections. These are in line with the *Employers* requirements.

c) The *Contractor* is responsible for defining the level of intervention of QA/QC or inspections to be imposed on his Sub-*Contractor*'s, suppliers and sub-suppliers and must ensure that these are in line with the *Employer*'s requirements.

d) The intervention requirements take into consideration the criticality of the Plant and Material.

e) The intervention points include all witness, hold, verification and review points required by the *Employer*. The *Contractor's* failure to allow the intervention points will constitute a non-conformance.

2.5.3 Non Conformances and Defects

Where NCR's and Defect notifications are issued, the *Contractor* acknowledges receipt within 48 hours and proposes corrective and preventive actions to the *Project Manager* as per the contract response period. The corrective and preventive actions will include the implementation and completion dates. Progress on all NCR's and Defect notifications issued to the *Contractor* must be reported to the *Project Manager* on monthly basis.

The *Contractor's* Quality Manager keeps a register of all NCR's and Defect notifications issued. Deviations from the Contract are treated as a non-conformance. Records of NCRs and Defect notifications are kept and form part of the data book records.
During the contract execution phase, the *Contractor* will be monitored by the *Project Manager* for performance on quality related aspects. The monitoring will be in the form of audits and assessments.

2.6 Programming constraints

2.6.1 Inclusions in the programme

General
This contract shall follow ECC contract, Clause 3-Time.
The Contractor submits a Level 4 Microsoft project or Primavera P6 programme for the project manager acceptance.

- Discipline Speciality Program (Level 4)

This is the execution Schedule, also called a Project Working Level Schedule. Level 4 is the detailed working level schedule, where each schedule is an expansion of part of a Level 3 schedule and is established within the integrated project schedule.

This programme typically represents day-to-day tasks which are work unit based and become summarised in the Level 3 activities showing the following:

- The starting date, access dates, key dates, and planned completion date.
- The order and timing of all tasks which the contractor plans to do in order to provide the works
- Critical path
- Float
- Time risk allowances, which shall include weather allowance.
- Health and safety requirement

2.6.2 Computerised Planning and Reporting
The programme shall be submitted in MS Project/ Primavera P6 format and the basis of schedule to support the schedule, showing inclusion and exclusions.

2.6.3 Project Calendar
The project calendar includes working days (Monday to Friday) and excludes non-working days which are weekends (Saturday to Sundays) and Public Holidays. If and when the Contractor deems any period in a calendar year as a non-working day, e.g. pay weekends, etc. such shall be declared up front and agreed with the Project Manager in the first programme for acceptance by the Project manager. Failure to declare these days shall render any later declaration as null and void and the Contractor shall provide the services to comply with the accepted first programme.

2.6.4 Additional Programme Requirements

The programme layout takes into account the Key Dates provided in the Contract and the Work Breakdown Structure (WBS).

The following levels of programme are to be used for this project for dynamic integrated project control:

- Management level programme (Level 1)
- Project level programme (Level 2)
- Control level programme (Level 3)
- Discipline speciality programme (Level 4)

2.6.5 Submission of Revised Programmes

The Contractor submits one electronic copy in MS Project (MPP) of the revised programme to the Project Manager for acceptance. The contractor shows on each revised programme.

- The actual progress achieved on each operation and the timing of the remaining works
- The effects of the implemented compensation event
- How the contractor plans to deal with any delay and to correct the notified defects
- Any other changes that the contractor proposes to make to the acceptance programme.

2.6.6 Bi-Weekly Progress reporting

A bi-weekly status report is submitted by the Contractor to the Project Manager. The Contractor submits updated programme bi-weekly or as instructed by the Project Manager.

. Contents of a weekly report will include the following items:

- The updated MS Project/ Primavera P6
- Programme summary narrative (Basis of schedule)
- Progress and performance summaries
- Key Milestone status

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

Contractor to submit an Organogram for the company indicating all roles and responsibilities relevant to the implementation of the work stated in this document. The *Contractor* is required to make all appointments as per the technical, Quality and Health and Safety and Environmental requirements. The *Contractor* shall provide all SHEQ and compliance documentation which include but not limited to the following:

- SHEQ policy
- SHE Plan
- Environmental Plan
- Environmental Policy
- Risk Management Plan
- Baseline Risk assessment
- All accreditation and qualifications
- Technical and professional organizations affiliations.
- SHEQ appointments
- SHEQ accreditations

2.8 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 *Service 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;
- The invoice is to be submitted to invoiceseskomlocal@eskom.co.za once confirmed with the payment certificate.

2.9 Contract change management

Contract change management shall be done as per the NEC ECC compensation event process.

2.10 Provision of bonds and guarantees

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

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

3 Engineering and the *Contractor*'s design

3.1 *Employer*'s design

The *Employer* has designed for the *Works* and the *Contractor* is mainly doing construction only.

3.2 As-built drawings, operating manuals and maintenance schedules

3.2.1 As-built Drawings

The *Contractor* provides "As Built" drawings/documentation for all his designs. The designs to embody all modifications made during construction/installation. "As Built" documentation to be provided for the entire project scope i.e. civil, mechanical, electrical and C&I works etc.

3.2.2 Operating Manuals and Maintenance schedules

The *Contractor* shall prepare and submit operating and maintenance manuals for all supplied equipment under this contract. The manuals to provide a detailed/complete record of information relating to the proper and safe operation and maintenance of the supplied items. The *Contractor* to submit the documentation to the *Employer* for review and acceptance. The *Contractor* to submit the operating and maintenance manuals prior conducting any testing or commissioning activities. The manuals shall provide comprehensive information on the following but not limited to:

a. Equipment technical data
b. Detailed drawings of supplied equipment
c. Operating philosophy of supplied equipment
d. Prescribed maintenance schedule or routine maintenance procedures/instructions per manufacturer requirements at the recommended service intervals

e. Commissioning procedures

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

Eskom Holdings Limited's requirements regarding employment of unskilled or semi-skilled workers are as follows:

Kusile Power Station requires that during recruitment of unskilled or semi-skilled labour, the *Contracto*r or its subsidiaries should make every effort to employ minimum target as per SDL&I requirements. The *Contractor* shall under no circumstances be allowed to recruit labourer(s) at Kusile Power Station main security gate. The *Contractor's* employees shall undergo security screening/clearance obtainable from SAPS or MIE or any accredited institution.

4.2 Subcontracting

4.2.1 Preferred subcontractors

The *Contracto*r may sub-contract specialised work and shall not subcontract more than a 25% of the value of the contract to any other entity that does not have an equal or higher B-BBEE status level of a contributor than the supplier concerned unless the contract is subcontracted to an EME that has the capability and ability to execute the subcontract work.

4.2.2 Limitations on subcontracting

The *Contracto*r may sub-contract specialised work and shall not subcontract more than a 25% of the value of the contract to any other entity that does not have an equal or higher B-BBEE status level of a contributor than the supplier concerned unless the contract is subcontracted to an EME that has the capability and ability to execute the subcontract work.

4.3 Plant and Materials

4.3.1 Quality

a) The Contractor is responsible for defining the level of QA/QC (intervention Points) or inspection to be imposed on his Subcontractors and suppliers of material in the Quality Control Plans (QCPs).
b) The Contractor submits monthly, the following QA returns:

- A register of Defects with those older than 30 days being flagged, and an explanation attached.
- Register of accepted Defects
- A register of Non-Conformance Report
- Monthly Project Quality Report
- Monthly updated Site and pre-site programmes
- Inspection dates
- Site Acceptance Tests
- Inspections completed / outstanding

5 Construction

5.1 Temporary works, Site services & construction constraints

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

All persons entering the Kusile Power Station site pass through the control points at the main access gate and are required to have temporary permits that are issued to *Contractor's* 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 staff are transferred from Kusile Power Station 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.

Under no circumstances shall the *Contractor* recruit outside Kusile Power Station's security gate. An applicable local office for recruitment shall be used.

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

The generator area and the other units are barricaded and out of bounds and only authorised persons are permitted. Areas outside the site are out of bounds to the *Contractor*'s staff.

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

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

5.1.4 Title to materials from demolition and excavation

The *Contractor* has no title to materials from excavation and demolitions.

5.1.5 Cooperating with and obtaining acceptance of Others

The Contractor may be required to give or obtain access from Others during execution of the *Works*.

5.1.6 Publicity and progress photographs

The *Contractor* shall not take any photographs on site without the *Employer*'s written permission.

5.1.7 *Contractor*'s Equipment

Contractor's equipment shall be clearly marked, as tools and material need to be declared at the gate before entering the site, and the same declaration shall be used to remove equipment from site.

5.1.8 Site services and facilities

The *Employer* shall provide power supply connection point in the form of 220V AC power, water, waste disposal skips. The *Contractor* shall provide everything else necessary for Providing the *Works*.

5.1.9 Facilities provided by the *Contractor*

The Contractor shall provide for his own Site accommodation, construction camps, storage, vehicles, office equipment and all other requirements deemed necessary for him to do site establishment. Upon completion of the contract, the *Contractor* shall do site de-establishment and restore the allocated area to its original state.

5.1.10 Underground services, other existing services, cable and pipe trenches and covers

Scanning of underground services and utilities shall precede all excavation works. The Contractor shall obtain all relevant drawings, indicating the position of potential underground services in the project area. Care shall be taken by the Contractor to properly demarcate and protect all existing services. Should any service be damaged by the Contractor, it is the responsibility of the Contractor to report such damage to the Employer immediately. If any service or structure is damaged by the Contractor, that should have been located or protected by the Contractor, the Contractor shall be liable for the repair works.

5.1.11 Control of noise, dust, water and waste

Where there is work to be performed in the buildings occupied by personnel and noise and dust may be induced, it is the responsibility of the *Contractor* to inform the Project Manager for awareness and preparation to mitigate.

5.2 Completion, testing, commissioning and correction of Defects

5.2.1 Work to be done by the Completion Date

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

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

The *Employer* shall certify the *Works* before use.

5.2.3 Commissioning

The Contractor shall test, verify, and commission the equipment. The Contractor submits all drawings and data for the installed equipment to the *Project Manager*. Submit all relevant documentation (not limited to below):

- *Contractor's* Commissioning Procedure
- Full equipment list with applicable manuals.
- Operating and maintenance manuals for equipment installed.
- Commissioning and testing documentation.
- Submit all the signed QCP and ITP documentation.
- Provide warranties and guarantees documentation for all installed equipment once work is completed.

5.2.4 Take over procedures

Take over is after or at the same time as Completion. The *Employer* may require the *Contractor* to provide assistance, security personnel on a temporary basis etc.

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

The *Employer* shall arrange a Permit To Work to allow the *Contractor* to access and use part of the *Works* which has been taken over if needed to correct a Defect. After the *Works* have been put into operation, the *Employer* may require the *Contractor* to undertake certain procedures before such access can be granted.

PART 4: SITE INFORMATION

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C4	Site Information	1
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PART 4: SITE INFORMATION

1. General description

Site	:	Kusile Power Station
Regional Authority	:	Emalahleni Local Municipality, Mpumalanga Province
Nearest Towns	:	Emalahleni – 42km north east of power station
		Bronkhorstspruit – 41km south of power station
		Delmas – 45km north of power station
		There are informal settlements within a 10 km radius of the power station.
Infrastructure	:	Kusile Power Station is situated approximately 3km from the N4 highway and is connected to it by means of a tarred road. There is also a secondary tarred road connecting the site with the R545 and D686.
Latitude & longitude	:	
Landowner	:	Portions of Horingkraans Farm
River catchment	:	Wilge River
Regional Climate		Kusile Power Station is situated in the Mpumalanga Province 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 -7ºC and 23ºC.
		The summers are mild with most of the rainfall occurring during this season. Temperatures vary between 12º & 32º C.
Wind direction		Data from the Emalahleni weather station shows that Kusile 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 Emalahleni weather station, the average annual rainfall for the Emalahleni area is approximately 691 mm. (Weather Bureau, Pretoria).