



NEC3 Engineering & Construction Contract

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

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

for **Provision of Essential Instrumentation Measurement Display**

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 and Acceptance	[•]
[to be inserted from Returnable Documents at award stage]	
C1.2a Contract Data provided by the <i>Employer</i>	[•]
C1.2b Contract Data provided by the <i>Contractor</i>	[•]
[to be inserted from Returnable Documents at award stage]	
C1.3 Proforma Guarantees	[•]

C1.1 Form of Offer & Acceptance

1.1 Offer

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

Provision of Essential Instrumentation Measurement Display

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

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

Options A	The offered total of the Prices exclusive of VAT is	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*.

1.2 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.

1.3 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.

1.3.1.1 For the tenderer:

1.3.1.2 For the Employer

Signature _____

Name _____

Capacity _____

On behalf of _____
(Insert name and address of organisation)

Name & signature of witness _____

Date _____

C1.2 ECC3 Contract Data

2 Part one - Data provided by the *Employer*

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

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
	dispute resolution Option and secondary Options	A: Priced contract with activity schedule W1: Dispute resolution procedure X2 Changes in the law X5: Sectional Completion X7: Delay damages X15: Limitation of <i>Contractor's</i> liability for design to reasonable skill and care X16: Retention X17: Low performance damages X18: Limitation of liability Z: <i>Additional conditions of contract</i>
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The <i>Employer</i> is (Name):	Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa
	Address	Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg
10.1	The <i>Project Manager</i> is: (Name)	[•]
	Address	[•]
	Tel	[•]

	Fax	[•]	
	e-mail	[•]	
10.1	The <i>Supervisor</i> is: (Name)	[•]	
	Address	[•]	
	Tel No.	[•]	
	Fax No.	[•]	
	e-mail	[•]	
11.2(13)	The <i>works</i> are	[•]	
11.2(14)	The following matters will be included in the Risk Register	<ul style="list-style-type: none"> • Weather Conditions • Working at height • Delays and Disruptions • Community Unrest • Labour Unrest • Late Delivery of materials • Poor workmanship • Plant availability • Others to be discussed and addressed during the execution 	
11.2(15)	The <i>boundaries of the site</i> are	-Grootvlei 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 <i>law of the contract</i> is the law of	the Republic of South Africa	
13.1	The <i>language of this contract</i> is	English	
13.3	The <i>period for reply</i> is	<ul style="list-style-type: none"> • 1 week for all contractual matters • immediately for health and safety matters 	
2	The Contractor's main responsibilities	Data required by this section of the core clauses is provided by the <i>Contractor</i> in Part 2 and terms in <i>italics</i> used in this section are identified elsewhere in this Contract Data.	
3	Time		
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	[•].	
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	Condition to be met	key date
		1 All works to be completed	TBA
		2 Kick off meeting	Immediately after awarding

				the contract
		3	Project submission	1 week after awarding the contract
		4	Safety file	1 week after awarding the contract
30.1	The <i>access dates</i> are:	Part of the Site		Date
		1	[•]	[•]
		2	[•]	[•]
		3	[•]	[•]
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	1 week of the Contract Date.		
31.2	The <i>starting date</i> is	[•]		
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	1 week.		
35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.	Clause X5 is included in the contract, whenever a section is complete the Employer will take over that section		

4 Testing and Defects

42.2	The <i>defects date</i> is	52 weeks after Completion of the whole of the <i>works</i> .		
43.2	The <i>defect correction period</i> is	1 Week of notification		
	except that the <i>defect correction period</i> for	Servers including recording and visual functions is 24 hours		
	and the <i>defect correction period</i> for	overall system is 24 hours		

5 Payment

50.1	The <i>assessment interval</i> is	before the 25 th day of each successive month.		
51.1	The <i>currency of this contract</i> is the	South African Rand.		
51.2	The period within which payments are made is	30 days		
51.4	The <i>interest rate</i> is	the publicly quoted prime rate of interest (calculated on a 365-day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands		

6 Compensation events

60.1(13)	The place where weather is to be recorded is:	Grootvlei Power Station
	The <i>weather measurements</i> to be recorded for each calendar month are,	Contractors shall obtain the weather
		measurements information from the South
		African Weather Bureau and Heidelberg
		weather station.
		the number of days with rainfall more than 10mm
	The <i>weather measurements</i> are supplied by	the South African Weather Bureau
	The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at:	Based on information recorded at the Heidelberg weather station, the average annual rainfall for the Heidelberg area is approximately 691 mm. (Weather Bureau, Pretoria).
	and which are available from:	the South African Weather Bureau
60.1(13)	Assumed values for the ten year return <i>weather data</i> for each <i>weather measurement</i> for each calendar month are:	As stated in the South African Weather Bureau
7	Title	There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.
8	Risks and insurance	
80.1	These are additional <i>Employer's</i> risks	None
9	Termination	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	
A	Priced contract with activity schedule	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.
11	Data for Option W1	
W1.1	The <i>Adjudicator</i> is	<p>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).</p> <p>If the parties do not agree on an Adjudicator, the Adjudicator will be appointed by the Arbitration</p>

Foundation of Southern Africa (AFSA)

W1.2(3)	The <i>Adjudicator nominating body</i> is:	the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body.
W1.4(2)	The <i>tribunal</i> is:	arbitration.
W1.4(5)	The <i>arbitration procedure</i> is	the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	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		
X7.1	Delay damages for late Completion of the <i>sections</i> of the <i>works</i> are:	1% per day of the total price of each activity and must not exceed 10% of the activity. The delay damages set out in clause X7 shall be the Employer's sole and exclusive remedy for delays	
X16	Retention		
X16.1	The <i>retention free amount</i> is The <i>retention percentage</i> is	5% of each assessed amount 50% payable at completion of the works. 50% payable after the defects date.	
X17	Low performance damages		
X17.1	The amounts for low performance damages are:	Amount	Performance level
		R 5,000 per day	Failure to revise the Programme as per the agreement.
		R 10,000 per day	For every incident where a Quality Control Plan is not submitted in accordance with the schedule and

			delays the starting of that activity
		R 10,000 per day	For every incident of quality non-compliance where Contractor fails to notify the Employer. And witness points on Quality Control Plan's
		R 5,000 per day	For every incident where a commissioning procedure is not submitted on time as planned in the Accepted Programme and delays the commissioning activity
		R 5,000 per day	Compliance with Safety file/ plan requirements. (If not approved as per the Accepted Programme within 1 week from submission, it shall be deemed to be approved)
	The total delay damages payable by the Contractor does not exceed		The total delay damages payable by the Contractor does not exceed 10% of the Contract Price

X18	Limitation of liability		
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	R0.0 (zero Rand) Neither party shall have any liability to the other for indirect or inconsequential loss (including loss of profit or loss of income)	
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	the amount of the deductibles relevant to the event not to exceed the total of the prices	
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to	The greater of <ul style="list-style-type: none"> the total of the Prices at the Contract Date and the amounts excluded and unrecoverable from the <i>Employer's</i> assets policy for correcting the Defect (other than the resulting physical damage which is not excluded) plus the applicable deductible as at contract date. 	
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	the total of the Prices other than for the additional excluded matters. The <i>Contractor's</i> total liability for the additional excluded matters is not limited. The additional excluded matters are amounts for which the <i>Contractor</i> is liable under this contract for <ul style="list-style-type: none"> Defects due to his design which arise before the Defects Certificate is issued, Defects due to manufacture and fabrication outside the Site, loss of or damage to property (other than the 	

		<p><i>works, Plant and Materials),</i></p> <ul style="list-style-type: none"> • death of or injury to a person and • infringement of an intellectual property right.
X18.5	The <i>end of liability date</i> is	<p>(i) 2 years after the <i>defects date</i> for latent Defects and</p> <p>(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.</p> <p>A latent Defect is a Defect which would not have been discovered on reasonable inspection by the <i>Employer</i> or the <i>Supervisor</i> before the <i>defects date</i>, without requiring any inspection not ordinarily carried out by the <i>Employer</i> or the <i>Supervisor</i> during that period.</p> <p>If the <i>Employer</i> or the <i>Supervisor</i> do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the <i>Employer</i> or the <i>Supervisor</i> to have discovered the Defect.</p>
Z	The <i>Additional conditions of contract</i> are	Z1 to Z15 always apply.
Z1	Cession delegation and assignment	
Z1.1	The <i>Contractor</i> does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the <i>Employer</i> .	
Z1.2	Notwithstanding the above, the <i>Employer</i> may on written notice to the <i>Contractor</i> cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.	
Z2	Joint ventures	
Z2.1	If the <i>Contractor</i> constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the <i>Employer</i> for the performance of this contract.	
Z2.2	Unless already notified to the <i>Employer</i> , the persons or organisations notify the <i>Project Manager</i> within two weeks of the Contract Date of the key person who has the authority to bind the <i>Contractor</i> on their behalf.	
Z2.3	The <i>Contractor</i> does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the <i>Employer</i> having been given to the <i>Contractor</i> in writing.	
Z3	Change of Broad Based Black Economic Empowerment (B-BBEE) status	
Z3.1	Where a change in the <i>Contractor's</i> legal status, ownership or any other change to his business composition or business dealings results in a change to the <i>Contractor's</i> B-BBEE status, the <i>Contractor</i> notifies the <i>Employer</i> 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 <i>Contractor</i> or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,
Coercive Action	means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,
Collusive Action	means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,
Committing Party	means, as the context requires, the <i>Contractor</i> , or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractor or the Subcontractor's employees,
Corrupt Action	means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,
Fraudulent Action	means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,
Obstructive Action	means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and
Prohibited Action	means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.
Z12.1	A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.
Z12.2	The <i>Employer</i> may terminate the <i>Contractor's</i> obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the <i>Contractor</i> did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the <i>Employer</i> 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 <i>Employer</i> can terminate the <i>Contractor's</i> obligation to Provide the Services for this reason.
Z12.3	If the <i>Employer</i> terminates the <i>Contractor's</i> 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 <i>Employer</i> does not have a contractual bond with the Committing Party, the <i>Contractor</i> 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.

2.1.1 INSURANCE TABLE A

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

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 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 <i>Employer</i> 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 <i>Employer</i> is solely responsible for and indemnifies the <i>Contractor</i> or any other person against any and all liabilities which the <i>Contractor</i> 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 <i>Contractor</i> or any other person or the presence of the <i>Contractor</i> or that person or any property of the <i>Contractor</i> or such person at or in the KNPS or on the KNPS site, without the permission of the <i>Employer</i> or of a person acting on behalf of the <i>Employer</i> .
Z14.3	Subject to clause Z14.4 below, the <i>Employer</i> 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 <i>Contractor</i> or any other person, or the presence of the <i>Contractor</i> or that person or any property of the <i>Contractor</i> or such person at or in the KNPS or on the KNPS site, without the permission of the <i>Employer</i> or of a person acting on behalf of the <i>Employer</i> .
Z14.4	The <i>Employer</i> 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 <i>Employer's</i> Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.
SANAS	means the South African National Accreditation System.
TWA	means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4 hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

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

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

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

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

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

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.

Z16 Employer's right to review the contract

Z16.1 In addition to clause 9, the Employer reserves the right to terminate or modify the contract when a need arises or when there are changes requiring such in the organisation.

C1.2 Contract Data

3 Part two - Data provided by the Contractor

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

11.2(21)		The <i>bill of quantities</i> is in	(in figures) (in words), excluding VAT		
11.2(31)		The tendered total of the Prices is			
		Data for Schedules of Cost Components	<i>Note “SCC” means Schedule of Cost Components starting on page 60, and “SSCC” means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).</i>		
A		Priced contract with activity schedule	Data for the Shorter Schedule of Cost Components		
41 SSCC	in	The percentage for people overheads is:	%		
21 SSCC	in	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 SSCC	in	The rates of other Equipment are:	Equipment	Size or capacity	Rate
61 SSCC	in	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 SSCC	in	The percentage for design overheads is	%		
63 SSCC	in	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 A

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

C2.1 Pricing assumptions: Option A

1. How work is priced and assessed for payment

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

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

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

2. Function of the Activity Schedule

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

3. Link to the programme

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

4. Preparing the *activity schedule*

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

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

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

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

An activity schedule could have the following format:

Item No.	Programme Reference	Activity description	Price

C2.2 the *activity schedule*

Item	Description	Unit	QTY	Rate	Total
	<u>Section :1</u>				
	<u>Preliminary and General</u>				
	Site Establishment				
1	Site offices(Tables,Chairs,Computer & Printer)	Sum	1.00	R -	R -
2	Site stores	Sum	1.00	R -	R -
3	Provision of drinking water to workers on site.	Sum	1.00	R -	R -
	De-establishment				
4	Removal of site establishment on completion of contract	Sum	1.00	R -	R -
	Accommodation				
5	Accommodation of labourers	Each	7.00	R -	R -
	Health and Safety				
6	Personal Protective Equipment (Gloves, dust mask, gumboots, safety boots, safety harness)	No.	7.00	R -	R -
7	Overalls	No.	14.00	R -	R -
8	Medicals and Induction for entire crew	No.	9.00	R -	R -
9	Police clearance for entire crew	No.	9.00	R -	R -
10	Provision of Safety File	Sum	1.00	R -	R -
	Travelling Costs				
11	Staff Avanza for labours to site and back (7 Seater)	Monthl y	1.00	R -	R -
	Sub total				R -
	Description	Unit	Qty	Rate	Total
	<u>Section :2</u>				
	<u>Labour Resources</u>				
1	Site Manager	No.	1.00	R -	R -
2	Engineer	No.	1.00	R -	R -
3	Technician	No.	1.00	R -	R -
4	Skilled labour	No.	2.00	R -	R -
5	Semi-skilled labour	No.	2.00	R -	R -
	Sub total				R -
	Description	Unit	Qty	Rate	Total
	<u>Section :3</u>				
	<u>Design</u>				

1	Traning	Sum	1.00	R	-	R	-
2	Pre-Loop Checks	Sum	1.00	R	-	R	-
3	Commissioning,Setup	Sum	1.00	R	-	R	-
4	QC and QA documantation	Sum	1.00	R	-	R	-
5	Engineering of Eurothern System,Integration not included.	Sum	1.00	R	-	R	-
	Eskom to supply drawings for termination locations						
	Sub total					R	-
	Description	Unit	Qty	Rate		Total	
	<u>Section :4</u>						
	<u>Implement</u>						
1	6180A - 6180A / U36 / NONE	No.	6.00	R	-	R	-
	6108A/ U36 / NONE / PANEL /NOLCK / SLV / VH / XXXX / XXXXXX / 096M / CF / NOMC / 008GMS / 0RGMS / 0RUSB / 0SRL / NONENOCAL / 06 / 00 / 00 / 00/ 00 / 36 /250 / XXXXX / BFULL / XXXXX/ NOADT / NOSM / 06GROUP / MTC00 / NOBTCH / NOSB / NOMSTR						
2	Reviewer	No.	1.00	R	-	R	-
3	Computer /Server 1TB storage 6HDMI outputs Intel Core 17 12700 32GB Ram Windows 10 Professional	No.	1.00	R	-	R	-
4	LG 32MP60G 31.5" Display 6off	No.	1.00	R	-	R	-
	MMC1						
5	Supply Multi-Mode SWA fibre optic cable	m	500.00	R	-	R	-
6	Supply 1PR 1MM 0/1 screen Degabon cable	m	1344.00	R	-	R	-
7	Supply 1200MM X 1000 X 400MM poly carb.JB	No.	1.00	R	-	R	-
8	Populate junction box	No.	1.00	R	-	R	-
9	Install Junction Box	No.	1.00	R	-	R	-
10	Install & Install Cable rack for JB	No.	1.00	R	-	R	-
11	Install SWA fibre cable multi mode	m	500.00	R	-	R	-
12	Install 1PR Degadon cable	m	1344.00	R	-	R	-
13	Supply No. 0 compression glands	No.	128.00	R	-	R	-
14	Supply No. 2 compression glands	No.	2.00	R	-	R	-
15	Gland & Terminate gable	No.	128.00	R	-	R	-
16	Supply and Install ST/ST Cable numbers	No.	128.00	R	-	R	-
17	Supply double pole circuit breaker 5A	No	1.00	R	-	R	-
18	Supply and Install ST/ ST labels	No.	2.00	R	-	R	-
19	Core drilling	No	1.00	R	-	R	-
	MMC2						

20	Supply Multi-Mode SWA fibre Optic cable	m	500.00	R	-	R	-
21	Supply 1PR 1MM 0/1 Screen Degabon Cable	m	1344.0 0	R	-	R	-
22	Supply 1200MM X 1000 X 400MM Poly Carb.JB	No.	1.00	R	-	R	-
23	Populate Junction Box	No.	1.00	R	-	R	-
24	Install Junction Box	No.	1.00	R	-	R	-
25	Install Cable Rack for JB	No.	1.00	R	-	R	-
26	Install SWA fibre Cable Multi Mode	m	500.00	R	-	R	-
27	Install 1PR Degabon Cable	m	1344.0 0	R	-	R	-
28	Supply No. 0 compression Glands	No.	128.00	R	-	R	-
29	Supply No. 2 compression Glands	No.	2.00	R	-	R	-
30	Gland & Terminate Gable	No.	128.00	R	-	R	-
31	Supply and install ST/ST cable numbers	No.	128.00	R	-	R	-
32	Supply double pole circuit breakers 5A	No.	1.00	R	-	R	-
33	Supply and install ST/ST Labels	No.	2.00	R	-	R	-
34	Core Drilling	No.	1.00	R	-	R	-
	MMC3						
35	Supply Multi-Mode SWA fibre Optic cable	m	500.00	R	-	R	-
36	Supply 1PR 1MM 0/1 Screen Degabon Cable	m	1344.0 0	R	-	R	-
37	Supply 1200MM X 1000 X 400MM Poly Carb.JB	No.	1.00	R	-	R	-
38	Populate Junction Box	No.	1.00	R	-	R	-
39	Install Junction Box	No.	1.00	R	-	R	-
40	Install Cable Rack for JB	No.	1.00	R	-	R	-
41	Install SWA fibre Cable Multi Mode	m	500.00	R	-	R	-
42	Install 1PR Degabon Cable	m	1344.0 0	R	-	R	-
43	Supply No. 0 compression Glands	No.	128.00	R	-	R	-
44	Supply No. 2 compression Glands	No.	2.00	R	-	R	-
45	Gland & Terminate Gable	No.	128.00	R	-	R	-
46	Supply and install ST/ST cable numbers	No.	128.00	R	-	R	-
47	Supply double pole circuit breakers 5A	No.	1.00	R	-	R	-
48	Supply and install ST/ST Labels	No.	2.00	R	-	R	-
49	Core Drilling	No.	1.00	R	-	R	-
50	Consumables	Sum	1.00	R	-	R	-
51	Plant codification & labelling as per engineers details.	Sum	1.00	R	-	R	-
52	Provision of Scaffolding	Sum	1.00	R	-	R	-
	Sub total					R	-
	Total						

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

C3.1: EMPLOYER'S WORKS INFORMATION

Contents

1	Description of the works	5
1.1	Executive overview	5
1.2	<i>Employer's</i> objectives and purpose of the <i>works</i>	5
2	Work to be performed by the Contractor to Provide the Works	6
2.1	Investigation Phase	6
2.2	Engineering (DESIGN PHASE)	6
2.3	EXECUTION	7
2.3.1	Module Racks	7
2.3.2	I/O Interface to equipment and DCS.....	7
2.3.3	Earthing, Lightning and Electrical protection	8
2.3.4	Cabling	8
2.3.5	Power supplies.....	8
2.3.6	Plant Codification and labelling.....	8
2.3.7	Commissioning	8
2.3.8	Completion and Handover	8
2.3.9	Documentation Control	8
2.4	General Requirements.....	9
2.5	Interpretation and terminology	9
3	Management and start up.	10
3.1	Management meetings	10
3.2	Documentation control.....	11
3.3	Health and safety risk management	11
3.4	Environmental constraints and management	111
3.5	Quality assurance requirements	111
3.6	Programming constraints.....	12
3.7	<i>Contractor's</i> management, supervision and key people	12
3.8	Invoicing and payment.....	12
3.9	Insurance provided by the <i>Employer</i>	122
3.10	Contract change management	13
3.11	Training workshops and technology transfer.....	13
4	Engineering and the <i>Contractor's</i> design	13
4.1	<i>Employer's</i> design	13
4.2	Parts of the <i>works</i> which the <i>Contractor</i> is to design	133

4.3	Procedure for submission and acceptance of <i>Contractor's</i> design	133
4.4	Other requirements of the <i>Contractor's</i> design.....	133
4.5	Use of <i>Contractor's</i> design	133
4.6	Design of Equipment	133
4.7	Equipment required to be included in the <i>works</i>	133
4.8	As-built drawings, operating manuals and maintenance schedules	144
5	Procurement	144
5.1	People.....	144
5.1.1	Minimum requirements of people employed on the Site	144
5.1.2	BBBEE and preferencing scheme	144
5.2	Subcontracting.....	144
5.2.1	Preferred subcontractors	144
5.2.2	Subcontract documentation, and assessment of subcontract tenders	144
5.2.3	Limitations on subcontracting	144
5.2.4	Attendance on subcontractors	144
5.3	Plant and Materials	15
5.3.1	Quality	155
5.3.2	Plant & Materials provided “free issue” by the <i>Employer</i>	155
5.3.3	<i>Contractor's</i> procurement of Plant and Materials	155
5.3.4	Spares and consumables	155
5.4	Tests and inspections before delivery	155
5.5	Marking Plant and Materials outside the Working Areas.....	155
5.6	<i>Contractor's</i> Equipment (including temporary works).....	155
5.7	Cataloguing requirements by the <i>Contractor</i>	Error! Bookmark not defined.5
6	Construction.....	155
6.1	Temporary works, Site services & construction constraints	155
6.1.1	<i>Employer's</i> Site entry and security control, permits, and Site regulations	155
6.1.2	Restrictions to access on Site, roads, walkways and barricades	166
6.1.3	People restrictions on Site; hours of work, conduct and records.....	166
6.1.4	Health and safety facilities on Site	166
6.1.5	Environmental controls, fauna & flora, dealing with objects of historical interest	Error! Bookmark not defined.6
6.1.6	Title to materials from demolition and excavation.....	166
6.1.7	Cooperating with and obtaining acceptance of Others	16
6.1.8	Publicity and progress photographs	177
6.1.9	<i>Contractor's</i> Equipment	177
6.1.10	Equipment provided by the <i>Employer</i>	177
6.1.11	Site services and facilities.....	177
6.1.12	Facilities provided by the <i>Contractor</i>	177
6.1.13	Existing premises, inspection of adjoining properties and checking work of Others	177

6.1.14	Survey control and setting out of the <i>works</i>	177
6.1.15	Excavations and associated water control.....	18
6.1.16	Underground services, other existing services, cable and pipe trenches and covers.....	18
6.1.17	Control of noise, dust, water and waste.....	18
6.1.18	Sequences of construction or installation	18
6.1.19	Giving notice of work to be covered up.....	18
6.1.20	Hook ups to existing works	18
6.2	Completion, testing, commissioning and correction of Defects.....	18
6.2.1	Work to be done by the Completion Date.....	18
6.2.2	Use of the <i>works</i> before Completion has been certified	18
6.2.3	Materials facilities and samples for tests and inspections	19
6.2.4	Commissioning	19
6.2.5	Start-up procedures required to put the <i>works</i> into operation	19
6.2.6	Take over procedures	19
6.2.7	Access given by the <i>Employer</i> for correction of Defects	19
6.2.8	Performance tests after Completion	19
6.2.9	Training and technology transfer	19
6.2.10	Operational maintenance after Completion	19
7	Plant and Materials standards and workmanship	19
7.1	Investigation, survey and Site clearance	19
7.2	Building works.....	19
7.3	Civil engineering and structural works.....	19
7.4	Electrical & mechanical engineering works	19
7.5	Process control and IT works	19
7.6	Other	19
8	List of drawings.....	19
8.1	Drawings issued by the <i>Employer</i>	19

1 Description of the works

1.1 Executive overview

The Fossil Fuel Firing Regulations (FFFR) has a requirement that always mandate the display of essential instrumentation/process parameters to the authorised boiler operator. The basis of the FFFR is the safe operation of the boiler plant. In order to achieve this, the authorised boiler operator requires all the essential measurements to be available to him/her on the control desk on a constant basis. There can occur however a situation where all these indications are “lost” to him although the control system is in a healthy state. In this situation the control system will continue to control the unit in a fully automatic manner with the protection system able to safely trip the plant when unsafe conditions are detected.

During the HMI failure, the operator may be required to perform manual plant operations to correct some boiler process parameters hence the requirement of having an independent Essential Instrumentation Measurements display. Essential Instrumentation Requirements as stated according to Fossil Fuel Firing Regulations (FFFR) requires that:

1. The design of the operator interface shall be such that the likelihood of Common Cause, Common Mode and Dependent Failures Shall prevent the loss of the display of essential instrumentation to the Authorized Boiler Operator. To achieve this requirement a sound design philosophy shall be followed using the concepts of independency, diversity, and physical separation.

1.2 Employer's objectives and purpose of the works

Currently Grootvlei Power Station does not have an installed system to mitigate this risk.

The design requirement is to mitigate the following specific risks:

1. The failure and complete loss of communication from the server-based HMI system.
2. The failure of computer HMI stations.
3. The failure of control system network equipment (network switches, network media converters
4. The loss of power to redundant systems within the communications structure from the server to the operator screens.

OVERVIEW OF THE CONCEPT FOR THE WORKS

The *Employer's* concept is shown in Figure 1 below which will be applicable to unit 1,2 and 3 only.

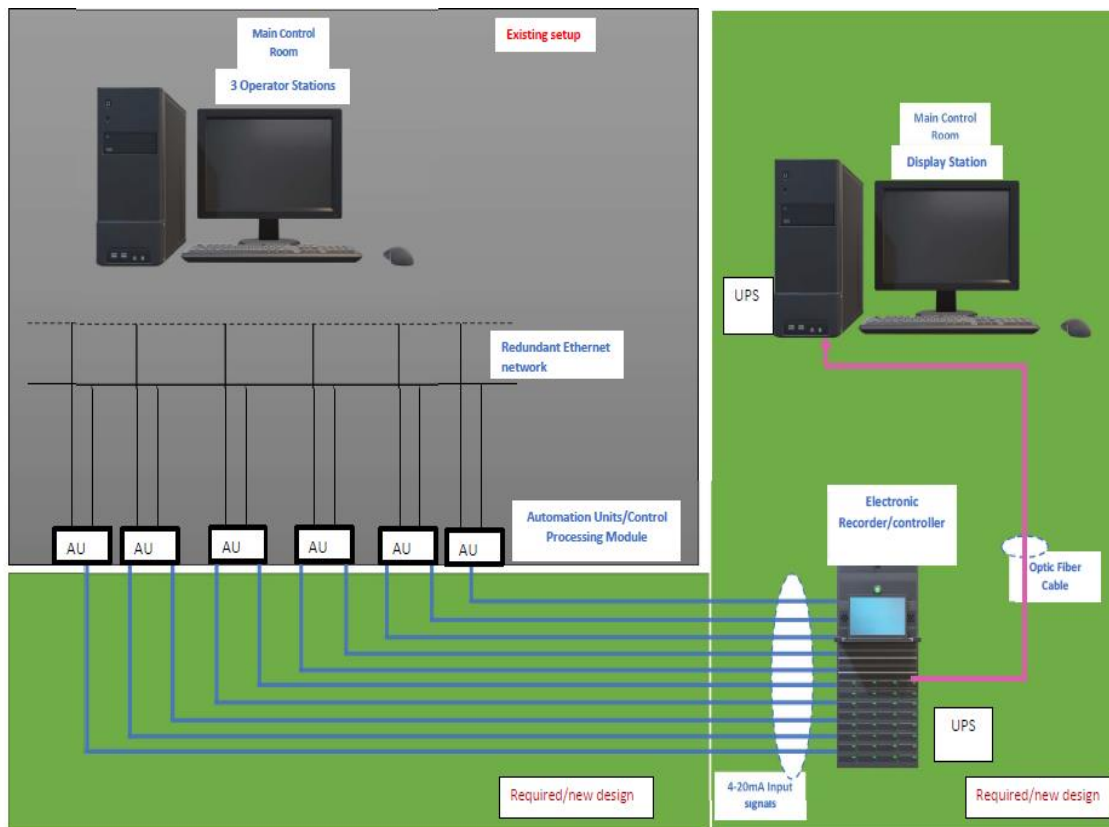


Figure 1: Required configuration

2 Work to be performed by the Contractor to Provide the Works

2.1 Clarification Phase

- No constraints are placed on the *Contractor* in terms of visitation rights to the Site in order to make a proper evaluation of all requirements. Systems engineering is defined as all the activities to ensure that the individual parts of the C&I as well as the C&I system together with its sub-systems, is designed and operates as an integrated and consistent system within itself and together with the rest of the plant.
- The system engineering activity includes the *Contractor's* site clarification at Grootvlei Power Station. The site clarification is required to determine the "as is" status and condition of the existing plant by participating with the *Employer* in establishing the new requirements referred to the "as required" for the control system.

2.2 Engineering (DESIGN PHASE)

The high-level scope of work for Provision of Essential Instrumentation Measurements Display project consist of but not limited to the following:

- Design loop drawings from Distributed Control System (DCS) in the unit equipment rooms to the station main control room

- b. Design, supply, routing and installation of power supply cabling to the recorder or controller and Essential Measurements Display. Even though the power is from the Uninterrupted Power Supply (UPS) Distribution Board, it's required that the recorder or controller and the essential measurement display be provided with a standalone UPS system to ensure the availability of the system.
- c. Provide design for (C&I) Control & Instrumentation system architecture network, optic fibre).
- d. Design, supply and installation of output cards (if the existing cards would not have sufficient spare channels, Eskom will conduct the assessment and make the final decision), system termination marshalling (JB), the Essential Measurements Display unit and any supporting structures required for the Essential Measurements Display unit. It is proposed to use electronic recorder or controller that would be capable of interfacing the 4-20 mA signals from the existing DCS or various industrial bus protocols (Ethernet, Modbus and Optic Fibre cable).
- e. The design shall in cooperate all the necessary equipment required for the full functioning of the Essential Instrumentation Display unit and its associated equipment.
- f. Design Input/output List from the DCS to the recorder or controller and to the station main control room. The DCS output list will be provided by the Employer however the contractor must in-cooperate it into the design loop drawings.
- g. Design system termination marshalling (rack layout drawings) for the Essential Measurements Display unit and any supporting structures required for the project.
- h. Provide cable design requirements for the signals from the DCS to the recorder/controller and the cable requirements from the recorder to the station main control room (Optic fiber cable design shall be such that there are at least 2 spare pairs available after utilising one pair for the works).
- i. Provide cable schedule Cable type and length.
- j. The contractor shall design the HMI and mapping of the signals on the display unit to allow viewing of the signals in the main control room.
- k. The selected equipment (recorder/controller) design shall be dust and waterproof.
- l. The design for the recorder/controller shall incorporate the cooling requirements for the recorder.
- m. The contractor will be required to hand over all the design documentation related to this project

2.3 EXECUTION

The *Contractor* will be required to provide the following but not limited to below mentioned equipment and services:

Supply, deliver, configure and install the recorder or controller, its mounting structure, UPS, cabling, networking components, essential measurement display units and all the components required for the complete functioning of the system. The complete system shall be fully tested and commissioned and proven to be fully functional before handover to Eskom Grootvlei Power Station.

- a. Configuration of control system output signals
- b. Configuration of the essential measurements display(s) unit
- c. Updating of the control room layout drawing
- d. Commissioning of the system and ensuring the functionality as per requirement
- e. Supply of all equipment, manuals, software packages and software licences
- f. Training of the unit operator on the use of the essential measurement display.
- g. Training of Maintenance and Engineering personnel on the use of the essential measurement display.
- h. Providing the recommended spares list and holdings
- i. Provide Bill Of Quantities and Bill Of Materials
- j. Provide all updated Engineering design drawings and documentation related to this project.
- k. Provide all operation and maintenance manuals
- l. Conduct Factory Acceptance Test, Site Acceptance Test and Site Integration Test.

2.3.1 Module Racks

All I/O modules and FTA should be mounted in the existing racks and cabinets.

2.3.2 I/O Interface to equipment and DCS

The *Contractor's* is responsible for the I/O interfacing (running of new cables) to the equipment and control system. The Employer will provide the interfacing drawing from the DCS, system loop check must be done to ensure the functioning of each loop.

2.3.3 Earthing, Lightning and Electrical protection

All metal instrument casings should be properly earthed (grounded) to the earth mat to avoid any electromagnetic interference, which may arise from portable FM transmitters, cell phones and other equipment used in the plant or equipment room. Any other means of earthing to eliminate any interference is the *Contractor's* responsibility. The *Contractor* is responsible for the correct earthing concept for reliable and safe operation of the control system.

2.3.4 Cabling

The *Contractor* is responsible for supply, installation, termination, labelling, testing and commissioning of all cables. Cable racking is provided by the *Contractor* where necessary for the completion of the works, otherwise, existing cable routes and racks are utilised by the *Contractor*. The *Contractor* is responsible to provide conduits required for the installation of their equipment. The *Contractor* provides cable in accordance with Grootvlei Power Station Cabling and Racking specification. The cabling should not be exposed to damage and must be installed in a conduit or trunking as close as possible to the physical device.

2.3.5 Power supplies.

The *Employer* provides 380/220-volts AC and 24V DC bulk supplies.

2.3.6 Plant Codification and labelling.

Codification and labelling of all equipment and documentation supplied is part of the works and is the responsibility of the *Contractor*.

Plant codification is done according to the KKS system and is in accordance with the Grootvlei Power Station Coding and Labelling Specification.

The KKS plant codes will be provided by the *Employer*, KKS codes down to third level for equipment are used on documentation (e.g. drawings, equipment lists, cable schedules etc) as a unique identification means. References to plant are accompanied by the relevant KKS code for that item of plant.

2.3.7 Commissioning

The *Contractor* is responsible for the commissioning of the overall system with the *Employers* DCS supplier in order for the full functionality of the system.

2.3.8 Completion and Handover

The documentation requirements cover the stages for installation and commissioning

The *Contractor* shall provide the documentation, in 3 sets. The documents shall be hard and soft copies and two backup CD's or USB's as part of the handover process.

2.3.9 Documentation Control

The *Contractor* implements comprehensive document control of all documents, their revision status and of the document status in relation to the 'as built' and 'as designed' plant status. Procedures, document control, flow diagrams and indexes are included in this system. The drawing register contains the following information and should be submitted in a Microsoft Excel format, to the *Project Manager*:

- a. Revision
- b. Approval status Location of drawing at that stage
- c. Drawing description
- d. Sheet number

2.4 General Requirements

The *Contractor* is responsible for providing skills mentioned in the project resource section. The contractor shall be responsible for:

- a. Attending meetings when required
- b. Staffing and management
- c. Ensure compliance with OSHAct and SANS standards
- d. Ensure compliance with Eskom policies and procedures
- e. Compliance to all legal requirements
- f. Recruitments – give first preference to qualifying candidates around Dipaleseng area
- g. Ensure that work continues with no disruptions even if an employee is off site for that particular day
- h. Ensuring that all works are quoted for as per the works information.
- i. Ensuring the system is fully operational and functional on completion of the works

The *Contractor* employees during the period they are at Eskom Grootvlei site, will start work at agreed times between the Project Manager and the Contractor. Employees to be compensated for overtime work as per the basic conditions of employment act. The *Employer* reserves a right to re-interview/re-assess employees whenever a need arises. Should an employee be found not to be performing according to expectations, the *Employer* may request the employee to be removed from site and be replaced by a suitable candidate.

2.5 Interpretation and terminology

The following definition are used in this Works Information:

DEFINITIONS

"As built"	Revised status of the plant upon completion of the work done.

The following definition are used in this Works Information:

ABBREVIATIONS

Abbreviation	Meaning
BPS	Boiler Protection System
C&I	Control and Instrumentation
DCS	Distributed Control System
FFFR	Fossil Fuel Firing Regulations
HMI	Human Machine Interface
I/O	Input/Output
JB	Junction Box

Abbreviation	Meaning
KKS	Kraftwerk-Kennzeichensystem
mA	Milliampere
OEM	Original Equipment Manufacturer
UPS	Uninterrupted Power Supply
VDU	Visual display unit
OEM	Original Equipment Manufacture
SAT	Site Acceptance Test
SIL	Safety Integrity Level
VDSS	Vendor Document Submittal Schedule
QMP	Quality Management Program
QA/QC	Quality Assurance / Quality Control

3 Management and start up.

3.1 Management meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Kick off meeting	Once off after contract placement	Grootvlei Power Station or virtual	Employer, Contractor
Planning and progress meeting	Week or when the need arises	Grootvlei Power Station or virtual	Employer, Contractor and required stakeholders
Risk register meeting C.E meeting	Monthly or when the need arises	Grootvlei Power Station or virtual	Employer, Contractor
SHE statutory meeting	Monthly or when the communicated.	Grootvlei Power Station or virtual	Employer, Contractor

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information, or if not so, then 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.

3.2 Documentation control

The *Contractor* shall provide the following documentation:

- a. Quality control plan
- b. Environmental plan
- c. Safety plan
- d. Training matrix

And all other related documents that may be required by the *Employer*..

3.3 Health and safety risk management

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

The *Contractor* shall, when coming on site (Grootvlei Power Station), abide by the Eskom life saving rules. These will be provided by the *Employer* on the start of the contract.

The *Contractor* shall also abide by the Grootvlei's Safety, Health and Environmental Specifications for Contractors Procedure, which will also be provided by the *Employer*.

The *Contractor* shall, when coming on site (Grootvlei Power Station), make use of approved personal protective clothing such as overalls, safety shoes, safety hat, safety goggles, dust mask and gloves when necessary.

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

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

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

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

3.4 Environmental constraints and management

The *Contractor* shall comply with Grootvlei Power Station environmental management system. This includes the identification, collection, storage, transportation and disposal of waste. Hazardous waste shall be disposed in line with the applicable environmental legislation. It is important to note that all spillages must be cleaned immediately and reported to the project manager as soon as possible. It is the responsibility of the polluter to clean all spillages and for the rehabilitation of the polluted land and the cost associated with that.

The *Contractor* shall comply with the environmental criteria stated in the Environmental requirements provided.

3.5 Quality assurance requirements

The *Contractor* shall adhere to all quality requirements as noted in the quality evaluation criteria document issued as part of the tender package.

The *Contractor* implements a quality system and maintains the quality system until the completion of the whole of the Works. The system, will as a minimum, comply with the provisions of the ISO9001 and the Eskom Supplier Contract Quality Requirements Specification (240-105658000)The system will be to the *Employer's* satisfaction and will be accepted prior to the commencement of any work on site.

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

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

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

The contractor will ensure that they facilitate effective and efficient management of incident from the moment it occurs, until it can be audited and mitigated.

3.6 Programming constraints

The *Contractor* shall submit an updated program weekly, this will be discussed in daily progress meetings.

3.7 Contractor's management, supervision and key people

Contractors Management shall be available for all meetings related to this contract whenever a need arises and they shall be available to their employees.

Requirements:

1. Engineer with BEng/ BSc or Btech in Electrical/ Electronics to approve final design, 3 - 5 years' experience
2. Supervisor/Site Manager with a National Diploma or T3 or N6 with 3 – 5 years' experience
3. Skilled labour with N4 with trade test certificate, 2 – 5 years' experience
4. Unskilled Labour, 0 – 2 years' experience
5. Working at heights training required
6. Work experience in the related field of Electrical, Control & Instrumentation or Electronic Communication including maintenance and installation is a requirement.

The *Contractor* shall ensure that all resources needed to execute this SOW are included.

3.8 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 *Project Manager*;
- The contract number and title;
- *Contractor's* VAT registration number;
- The *Employer's* VAT registration number 4740101508;
- Description of service provided for each item invoiced based on the Price List;
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
- (add other as required)

Add procedures for invoice submission and payment (e. g. electronic payment instructions)

3.9 Insurance provided by the *Employer*

As stated for "Format A" available on

http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx

3.10 Contract change management

Change in scope is a compensation event. The *Employer* will be liable for any work executed without an official Purchase Order when a compensation event arises, the *Contractor* shall submit a quotation to the Project Manager for approval. Upon approval the *Contractor* shall be issued with a new Purchase Order for the additional work deviation in the works instruction. The *Contractor* shall not execute any scope without an approved purchase order, if such scope is executed, there will be no compensation by the *Employer*.

3.11 Training workshops and technology transfer

The *Contractor* shall train 10 *Employers* employees on completion of the project.
The *Contractor* shall ensure that the maintenance and or operating philosophy is handed over to the *Employer* and all the necessary training where applicable for the *Employer's* employees is completed.

All other required/ related training for *Contractor* employees shall be provided by the *Contractor*.

4 Engineering and the Contractor's design

Available designs will be issued to the *Contractor* and the *Contractor* shall fully update the drawings / designs on completion of the project as part of the project package.

4.1 Employer's design

Available designs will be issued to the *Contractor* and the *Contractor* shall fully update the drawings / designs on completion of the project as part of the project package.

4.2 Parts of the works which the Contractor is to design

The *Contractor* shall design all works required for the successful completion of this scope of work. All available drawings related to this scope will be shared with the *Contractor* to aid in successful completion these designs.

4.3 Procedure for submission and acceptance of Contractor's design

The *Contractor* submits all temporary works designs drawings where applicable to the Project Manager prior to execution of the temporary works. The designs must be signed by a Professionally Registered Engineer and in PDF format.

The same process shall be followed on completion of the project. The Project Manager shall communicate the milestones and updates with regards the *Employers* approval process.

4.4 Other requirements of the Contractor's design

All designs shall be signed off by a Professionally Registered Engineer and in PDF format.

4.5 Use of Contractor's design

Core clause 22.1 applies

4.6 Design of Equipment

The *Contractor* shall provide designs of all equipment required for the successful completion of this scope of work.

4.7 Equipment required to be included in the works

The *Contractor* shall ensure that all equipment required to execute this scope is available.

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

4.8 As-built drawings, operating manuals and maintenance schedules

The *Contractor* must handover all as built drawings for the beams replaced as per requirements of this contract. These drawings must be handed over in the following formats on an ESKOM name block, PDF and CAD DWG/DGN.

5 Procurement

5.1 People

5.1.1 Minimum requirements of people employed on the Site

The *Contractor* shall provide suitable and qualified resources and they shall employ resources around Dipaleseng Community through the local forum where they meet the requirements.

Verifications of skills and qualifications will be conducted on all Contractor Employees where need arises.

5.1.2 BBBEE and preferencing scheme

BBBEE requirements are specified in the Supplier Development and Localisation

Target setting document provided.

5.2 Subcontracting

5.2.1 Preferred subcontractors

Where subcontracting of certain activities is required, the *Contractor* shall notify the *Employer* and an agreement shall be obtained with the *Employer* to ensure compliance. Refer to the Supplier Development and Localisation Target Setting document

5.2.2 Subcontract documentation, and assessment of subcontract tenders

Subcontractors shall comply with all Eskom & all legal requirements and standards, and they remain the responsibility of the main *Contractor* and they shall be aligned to the Main *Contractor*. They shall adhere to Eskom ethics code.

5.2.3 Limitations on subcontracting

Where the *Contractor* encounters scenarios where specialised work is required, subcontracting of such services is to be obtained in agreement with the *Employer*. Refer to the Supplier Development and Localisation Target Setting document.

5.2.4 Attendance on subcontractors

Subcontractors shall remain the responsibility of the main *Contractor*. They shall adhere to the Employers code of ethics and comply with all the Employers requirements.

5.3 Plant and Materials

5.3.1 Quality

The Contractor shall work according to the standards and specification as prescribed in the works information.

5.3.2 Plant & Materials provided “free issue” by the *Employer*

All plant and material shall be provided by the *Contractor*. Where the scaffolding is required, the *Employer* shall provide.

5.3.3 *Contractor's* procurement of Plant and Materials

The *Contractor* procures and stores all materials as per the recommendations stipulated in the materials data sheet.

5.3.4 Spares and consumables

The Contractor shall provide required spares and consumables that may be needed at or just after take over to ensure continuity.

5.4 Tests and inspections before delivery

The Contractor shall test, inspect and ensure that the system is reliable and safe to use. Refer to clause 40 & 41.

The Contractor shall provide test/inspection certificates of the related equipment.

5.5 Marking Plant and Materials outside the Working Areas

All equipment shall be properly marked for identification.

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

The *Contractor* shall use inspected and tested equipment, equipment compliance documents shall be made available on request by the *Employer*.

6 Construction

6.1 Temporary works, Site services & construction constraints

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

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

Access to site shall be in line with the Grootvlei Power Station's access procedure. The *Contractor* shall be required to make an application to enter site for the duration of the contract, including the warranty and defect period where applicable. A permit shall only be issued once the *Contractor* and his or her employees have attended the safety induction and has undergone medical checks.

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

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

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

The *Contractor* shall adhere to site access control requirements; all *Contractor* employees including sub-*Contractors* shall undergo medical screening and be declared fit to work.

The *Employer* will provide induction to all *Contractor* employees and sub-contractors before the *Contractor* can start working, the *Contractor* shall have a safety file approved by the Employer and then all employees shall be issued with site access permits.

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

Note that the speed limit on the site is 40 km/h and 10 km/h in the plant. The vehicle permit of any persons contravening any traffic act on site shall be cancelled.

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

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

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

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

The Contractor records information of all those that enter the *Employers* site on each site. This information is to be presented to the *Employer* on the day of the site visit.

Working hours at Grootvlei Power Station are as follows:

Monday – Thursday : 07:15 to 16:30

Friday : 07:15 to 12:15

Saturday, Sunday and Public Holidays : Off

6.1.4 Health and safety facilities on Site

The Contractor shall comply with Health and Safety requirements, Refer to the SHE spec provided.

The *Employer* and the *Contractor* shall provide services and other things as stated in the works Information. Any cost incurred by the *Employer* as a result of the *Contractor* not providing the services and other things which he is to provide is assessed by the *Project Manager* and paid by the *Contractor*.

6.1.5 Title to materials from demolition and excavation

The default position is the Contractor has no such title.

6.1.6 Cooperating with and obtaining acceptance of Others

The *Contractor* co-operates with others in obtaining and providing information and access which they need in connection with works. Refer to clause 25.

6.1.7 Publicity and progress photographs

The *Contractor* shall not share the *Employers* plant photographs or any other information without prior approval by the *Employer*. Such conduct is regarded as a deviation and there will be legal actions taken against the *Contractor*. The *Contractor* shall seek approval before taking any photographs on the *Employers* site or of any other information concerning this project.

6.1.8 Contractor's Equipment

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

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

The contractor shall declare all equipment/tools on arrival to security and keep a record at all times.

6.1.9 Equipment provided by the Employer

Scaffolding will be provided by the Employer, the Contractor shall notify the Employer of a need for scaffolding at least 12 hours prior.

6.1.10 Site services and facilities

The *Employer* shall provide services such as water, electricity and the Contractor shall provide everything else necessary for providing the works. Refer to clause 25.2 in ECC3.

6.1.11 Facilities provided by the Contractor

At his own cost, the *Contractor* provides his/her own accommodation and transport for all his/her employees engaged in the execution of the works. This includes the needs of his/her sub-*Contractors*. No accommodation is available at Grootvlei Power Station. The *Contractor* shall provide his/her own office equipment, storage, vehicles and all these shall be declared on site entry. Any un- roadworthy vehicles will not be allowed in the *Employers* premises.

6.1.12 Existing premises, inspection of adjoining properties and checking work of Others

The *Contractor* is required to inspect and scan the work area prior to the commencement of works to ensure that no underground services are damage when excavating and all the Others that maybe affected shall be notified by the *Contractor* through the Project Manager. The *Contractor* shall notify the Project Manager before any excavation work can commence.

6.1.13 Survey control and setting out of the works

The *Contractor* shall do thorough assessments to ensure the area is safe to work on.

6.1.14 Excavations and associated water control

The *Contractor* is required to inspect and scan the work area prior to the commencement of works to ensure that no underground services are damaged when excavating. The *Employer* will support the *Contractor* in assessing the area to be excavated and issue an excavation permit when all requirements after inspections and scanning by the *Contractor* are met.

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

The following drawings are provided by the Employer:

- 0.19/11001
- 0.19/11002
- 0.19/11003Rev2
- 0.19/11004Rev1
- 0.19/11005
- 0.19/1164Rev1

The Contractor shall provide his own detection equipment for locating underground services. Damage to known and unknown services will be at the Contractors cost; therefore the contractor shall make sure the area is effectively detected and declared clear of services. if there is damage to the Employers services, the Employer will assess the extent of damage and formally communicate penalties applicable.

6.1.16 Control of noise, dust, water and waste

The Contractor shall manage waste accordingly and always use appropriate Personal Protective Equipment.

6.1.17 Sequences of construction or installation

The Contractor shall follow to the construction program sequence, if there are changes (where access should be given to Others or for any other valid reason), this should be communicated to the Project Manager and the Project Manager shall approve before the sequence can be changed.

6.1.18 Giving notice of work to be covered up

Where applicable, on completion of the activity that involved excavation or any other activity, the Contractor shall notify the Employer to conduct inspections as prescribed in the QCP; the Employer shall give the Contractor a go ahead to backfill provided the activity is done according to the specified requirements.

6.1.19 Hook ups to existing works

The Contractor shall notify the Employer of any activities that requires hooking up, before any structure can be used for hooking up the Employer shall declare such structure safe for hooking up.

6.2 Completion, testing, commissioning and correction of Defects

6.2.1 Work to be done by the Completion Date

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

	Item of work	To be completed by
	As built drawings of the whole system	Within 7 days after Completion
	Performance testing of the works in use as specified in 1.3 of this Works Information.	See performance testing requirements.

6.2.2 Materials facilities and samples for tests and inspections

The Contractor shall use any facilities as he sees fit and reliable for tests and inspection. He shall ensure that they are safe to be used.

6.2.3 Commissioning

Commissioning shall be done after completion and the *Contractor* shall ensure the system is working fully.

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

The *Contractor* shall ensure the *Employer* is notified for start-up to observe the process and all legal and the *Employers* applicable standards shall be adhered to.

6.2.5 Take over procedures

On completion of the whole works, the *Employer* shall take over the plant. The *Contractor* ensures that the plant is in a good condition and all defects are noted for correction within the contract stipulated duration where applicable.

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

The *Employer* shall arrange access for the *Contractor* where a notice for defects is raised; the *Contractor* shall follow the process of gaining entry and the *Employer* ensures that the plant is available for the *Contractor*.

6.2.7 Training and technology transfer

The *Contractor* shall train 10 *Employer* employees on completion.
The *Contractor* shall provide the Maintenance / operating philosophy and the drawing/ designs.

7 Plant and Materials standards and workmanship

7.1 Electrical & mechanical engineering works

All works to be done in accordance to the scope of work document which details the entire scope at hand with all the technical specifications for the works.

7.2 Process control and IT works

All works to be done in accordance to the scope of work document which details the entire scope at hand with all the technical specifications for the works.

8 List of drawings

8.1 Drawings issued by the *Employer*

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

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

Drawing number	Revision	Title
HBSESG-2010_05_06/1	2	DVM System Architecture
0.19/24795	2	Grootvlei Power Station Overall Layout Security Installation
0.19/24900	0	Grootvlei Power Station Control Room Layout
0.19/24880	0	Grootvlei Power Station SA Fence and Gate Main Entrance Layout
0.19/24793	4	Grootvlei Power Station Vaal Dam Installation Layout

0.19/24904 (1/2)	0	Vaal Dam High Lift Security C&I Installation
0.19/24904 (2/2)	0	Vaal Dam Security Intake C&I Installation
0.19/24903	0	Telematick Link
0.19/24905 (1)	0	Grootvlei Power Station High Site Detailed Layout Security Installation

PART 4: SITE INFORMATION

Site	:	Grootvlei Power Station
Regional Authority	:	Dipaliseng Town Council, Mpumalanga Province
Nearest Towns	:	Balfour – 18km north east of power station Villiers – 30km south of power station Heidelberg – 40km north of power station There are informal settlements within a 10 km radius of the power station.
Infrastructure	:	Grootvlei Power Station is situated approximately 3km from the N3 highway and is connected to it by means of a tarred road. There is also a secondary tarred road connecting the site with the R51 and R53. Water is supplied to the adjoining township, and sewage is returned to the sewerage Works of the power station. The railway line from Balfour to Bethlehem passes the station. 400kV and 88kV power lines cross the existing road network in the area.
Latitude & longitude	:	26° 46' S & 28° 29' E
Landowner	:	The power station is situated on the farm Grootvlei Power Station, ERF 458 IR, Title deed number CCT50784/1983. Eskom is the landowner.
River catchment	:	Mid-Vaal
Regional Climate	:	Grootvlei Power Station is situated on the Highveld in the western part of Mpumalanga province on the escarpment, at an average height of 1551 m above sea level. The winters are generally dry and cold with regular frost and temperatures varying between -7°C and 23°C. The summers are mild with most of the rainfall occurring during this season. Temperatures vary between 12° & 32° C.
Wind direction	:	Data from the Heidelberg weather station shows that Grootvlei Power Station is sited in such a way that for most of the year (291 days) the wind direction is from the power station in a direction that is North West.

Rainfall

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

C3.2 *CONTRACTOR'S* WORKS INFORMATION

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

Typical sub headings could be

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

This section could also be compiled as a separate file.
