



NEC3 Engineering & Construction Contract

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

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

for **[•]**

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

Offer

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

Replacement of Tutuka Power Station Hydrogen Generating Plant

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 B, C or D	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)

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

Acceptance

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

The terms of the contract, are contained in:

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

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

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

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

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

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

Signature(s)

Name(s)

Capacity

for the
Employer

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

Name &
signature of
witness

Date

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

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

Note:

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

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

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

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

For the tenderer:

For the Employer

Signature

Name

Capacity

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

(Insert name and address of organisation)

Name &
signature
of witness

Date



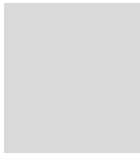
C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

[Instructions to the contract compiler: (delete these two notes in the final draft of a contract)]

- Please read the relevant clauses in the conditions of contract before you enter data. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data.
- Some ECC3 options are always selected by Eskom Holdings SOC Ltd. The remaining ECC3 options are identified by shading in the left hand column. In the event that the option is not required select and delete the whole row. Where the following symbol is used "[•]" - data is required to be inserted relevant to the specific option selected.]

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

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
		A: Priced contract with activity schedule
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	
		X1: Price adjustment for inflation
		X2: Changes in the law
		X3: Multiple Currencies
		X16: Retention
		X18: Limitation of Liability
		Z: Additional Condition of contract
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The <i>Employer</i> is (Name):	Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa
	Address	Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg
10.1	The <i>Project Manager</i> is: (Name)	[•]

	Address	Tutuka Power Station
	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	The scope of the work accounts for the design, manufacture, decommissioning, installation and commissioning of a new Electrolysis plant at Tutuka Power Station
11.2(14)	The following matters will be included in the Risk Register	<ul style="list-style-type: none"> • Labour Unrest • Access to site (National Key Point)
11.2(15)	The <i>boundaries of the site</i> are	Tutuka Power Station & its surroundings
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 refers including documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)
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	<p>1. Two (2) working days during installation and commissioning.</p> <p>2. For SHEQ related incident during construction: Immediately or as deemed necessary by both parties dependant on the level of the incident</p> <p>3. Five (5) working days during design</p>
2	The Contractor's main responsibilities	Data required by this section of the core clauses is provided by the <i>Contractor</i> in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.
3	Time	
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	2 years after contract award

11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	Condition to be met	key date
		1 Completion obligations of SDL&I	During the period of the contract
		2 [•]	[•]
		3 [•]	[•]
30.1	The <i>access dates</i> are:	Part of the Site	Date
		1 Access to Hydrogen plant	After contract award
		2 [•]	[•]
		3 [•]	[•]
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	10 working days after contract award	
31.2	The <i>starting date</i> is	October 2022	
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	Five (5) working days during design & Installation	
35.1	The <i>Employer</i> is not willing to take over the <i>works</i> before the Completion Date.	[No data needed if this statement is included]	
4	Testing and Defects		
42.2	The <i>defects date</i> is	52 weeks after Completion of the whole of the works.	
43.2	The <i>defect correction period</i> is	Normal Defects within 1 week	
	except that the <i>defect correction period</i> for	If it affects the plant performance is 24 hours if it, 1st level technical person will be onsite	
	and the <i>defect correction period</i> for	threats to the safety of people is 12 hours, 1st level technical person will be onsite	
5	Payment		
50.1	The <i>assessment interval</i> is	either after completion of activities assessed or as agreed by both parties	
51.1	The <i>currency of this contract</i> is the	South African Rand.	
51.2	The period within which payments are made is	The invoice payment will be done in accordance with payment terms from the date of receipt of the invoice for each activity(ies) assessed provided the invoice comply with the Employer's requirements	
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 and

(ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted *mutatis mutandis* every 6 months thereafter and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove.

6 Compensation events

60.1(13)	<p>The place where weather is to be recorded is: [•]</p> <p>The <i>weather measurements</i> to be recorded for each calendar month are, the cumulative rainfall (mm)</p> <p>the number of days with rainfall more than 10 mm</p> <p>the number of days with minimum air temperature less than 0 degrees Celsius</p> <p>the number of days with snow lying at 09:00 hours South African Time</p> <p>and these measurements:</p> <p>The <i>weather measurements</i> are supplied by [•]</p> <p>The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at: [•]</p> <p>and which are available from: the South African Weather Bureau and included in Annexure A to this Contract Data provided by the <i>Employer</i></p>
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60.1(13)	<p>Assumed values for the ten year return <i>weather data</i> for each <i>weather measurement</i> for each calendar month are:</p> <p>As stated in Annexure A to this Contract Data provided by the <i>Employer</i>.</p> <p>Note: If this arrangement is used, delete the rows above for 60.1(13) and delete this note.</p>
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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	1. 2. 3.
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	the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).
	Address	[•]
	Tel No.	[•]
	Fax No.	[•]
	e-mail	[•]
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	the Chairman for the time being or his nominee

	or - if the arbitration procedure does not state who selects an arbitrator, is	of the Association of Arbitrators (Southern Africa) or its successor body.
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12 Data for secondary Option clauses

X1	Price adjustment for inflation			
X1.1(a)	The <i>base date</i> for indices is		A month prior enquiry closing date	
X1.1(c)	The proportions used to calculate the Price Adjustment Factor are:	proportion	linked to index for	Index prepared by
		0. [•]	[•]	[•]
		0. [•]	[•]	[•]
		0. [•]	[•]	[•]
		0. [•]	[•]	[•]
		0. [•]	[•]	[•]
		[•]	non-adjustable	
	Total	1.00		
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.	
X3	Multiple currencies			
X3.1	The <i>Employer</i> will pay for these items or activities in the currencies stated	Items & activities	Other currency	Maximum payment in other currency
		[•]	[•]	[•]
		[•]	[•]	[•]
		[•]	[•]	[•]
		[•]	[•]	[•]
X3.1	The <i>exchange rates</i> are those published in	[•] on [•] (date)		
		The items & activities will be paid in the other currency - to a foreign Bank account nominated by the Contractor - to a valid SARB approved CFC account in South Africa - in accordance with an alternative payment method agreed with the <i>Employer</i> before the Contract Date. (select one of the three methods as agreed with successful tenderer and delete the others and this note)		

X16	Retention (not used with Option F)	
X16.1	The <i>retention free amount</i> is	R[•].
	The <i>retention percentage</i> is	5% of each invoice amount to be retained (2,5 % for the Works and 2,5% as per SDL &I requirement)
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)
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	the amount of the deductibles relevant to the event
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to	The greater of <ul style="list-style-type: none"> • the total of the Prices at the Contract Date and • the amounts excluded and unrecoverable from the <i>Employer's</i> assets policy for correcting the Defect (other than the resulting physical damage which is not excluded) plus the applicable deductible as at contract date.
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	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 <i>works</i>, Plant and Materials), • death of or injury to a person and • infringement of an intellectual property right.
X18.5	The <i>end of liability date</i> is	(i) 7 years after the <i>defects date</i> for latent Defects and (ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter. A latent Defect is a Defect which would not have been discovered on reasonable inspection by the <i>Employer</i> or the <i>Supervisor</i> before the <i>defects date</i>, without requiring any inspection

		not ordinarily carried out by the <i>Employer</i> or the <i>Supervisor</i> during that period. If the <i>Employer</i> or the <i>Supervisor</i> do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the <i>Employer</i> or the <i>Supervisor</i> to have discovered the Defect.
Z	The Additional conditions of contract are	Z1 to Z15 always apply.
Z1	Cession delegation and assignment	
Z1.1	The <i>Contractor</i> does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the <i>Employer</i> .	
Z1.2	Notwithstanding the above, the <i>Employer</i> may on written notice to the <i>Contractor</i> cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.	
Z2	Joint ventures	
Z2.1	If the <i>Contractor</i> constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the <i>Employer</i> for the performance of this contract.	
Z2.2	Unless already notified to the <i>Employer</i> , the persons or organisations notify the <i>Project Manager</i> within two weeks of the Contract Date of the key person who has the authority to bind the <i>Contractor</i> on their behalf.	
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 <i>Contractor</i> is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the <i>Project Manager</i> within thirty days of the notification or as otherwise instructed by the <i>Project Manager</i> .	
Z3.3	Where, as a result, the <i>Contractor's</i> B-BBEE status has decreased since the Contract Date the <i>Employer</i> may either re-negotiate this contract or alternatively, terminate the <i>Contractor's</i> obligation to Provide the Works.	
Z3.4	Failure by the <i>Contractor</i> to notify the <i>Employer</i> of a change in its B-BBEE status may constitute a reason for termination. If the <i>Employer</i> terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.	
Z4	Confidentiality	

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

Z5 Waiver and estoppel: Add to core clause 12.3:

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

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

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

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

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

Z8 Notifying compensation events

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

Z9 *Employer's* limitation of liability

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

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

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

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

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

Z12 Ethics

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

- Affected Party** means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,
- Coercive Action** means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,
- Collusive Action** means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,

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

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

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

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

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

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

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

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

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

Z13 Insurance

Z 13.1 Replace core clause 84 with the following:

Insurance cover 84

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

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

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

4.1.2 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 covered by the <i>Employer's</i> insurance

	The <i>Employer's</i> policy deductible, as at Contract Date, where covered by the <i>Employer's</i> insurance
Loss of or damage to Equipment	The replacement cost
Liability for loss of or damage to property (except the 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	<p><u>Loss of or damage to property</u></p> <p><u><i>Employer's</i> property</u></p> <p>The replacement cost where not covered by the <i>Employer's</i> insurance</p> <p>The <i>Employer's</i> policy deductible, as at Contract Date, where covered by the <i>Employer's</i> insurance</p> <p><u>Other property</u></p> <p>The replacement cost</p> <p><u>Bodily injury to or death of a person</u></p> <p>The amount required by applicable law</p>
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law

Z 13.2

Replace core clause 87 with the following:

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

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

Z15 Asbestos

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

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

Annexure A: One-in-ten-year-return *weather data* obtained from SA Weather Bureau for [weather station]

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

	<i>Weather measurement</i>				
Month	Cumulative rainfall (mm)	Number of days with rain more than 10mm	Number of days with min air temp < 0 deg.C	Number of days with snow lying at 08:00 CAT	[Other measurements if applicable]
January	[•]	[•]	[•]	[•]	
February	[•]	[•]	[•]	[•]	
March	[•]	[•]	[•]	[•]	
April	[•]	[•]	[•]	[•]	
May	[•]	[•]	[•]	[•]	
June	[•]	[•]	[•]	[•]	
July	[•]	[•]	[•]	[•]	
August	[•]	[•]	[•]	[•]	
September	[•]	[•]	[•]	[•]	
October	[•]	[•]	[•]	[•]	
November	[•]	[•]	[•]	[•]	
December	[•]	[•]	[•]	[•]	

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

C1.2 Contract Data

Part two - Data provided by the *Contractor*

[Instructions to the contract compiler: (delete this notes before issue to tenderers with an enquiry)

Whenever a cell is shaded in the left hand column it denotes this data is optional. If not required select and delete the whole row, otherwise insert the required Data.]

Notes to a tendering contractor:

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

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

Clause	Statement	Data
10.1	The <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:	

² Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see www.ecs.co.za

		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .	
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is		
11.2(14)	The following matters will be included in the Risk Register		
11.2(19)	The Works Information for the <i>Contractor's</i> design is in:		
31.1	The programme identified in the Contract Data is		
A	Priced contract with activity schedule		
11.2(20)	The <i>activity schedule</i> is in		
11.2(30)	The tendered total of the Prices is	(in figures) (in words), excluding VAT	
B	Priced contract with bill of quantities		
11.2(21)	The <i>bill of quantities</i> is in		
11.2(31)	The tendered total of the Prices is	(in figures) (in words), excluding VAT	
C	Target contract with activity schedule		
11.2(20)	The <i>activity schedule</i> is in		
11.2(30)	The tendered total of the Prices is	(in figures) (in words), excluding VAT	
D	Target contract with bill of quantities		
11.2(21)	The <i>bill of quantities</i> is in		
11.2(31)	The tendered total of the Prices is	(in figures) (in words), excluding VAT	
F	Management contract		
20.2	Work which the <i>Contractor's</i> will do himself is	Activity	price (lump sum or rate)
	2.1 Data for Schedules of Cost Components	Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).	

C1.2B ECC3 CONTRACT DATA PART 2

24 SCC	in	The rates of special Equipment are:	Equipment	Size or capacity	Rate
44 SCC	in	The percentage for Working Areas overheads is:	:		
51 SCC	in	The hourly rates for Defined Cost of manufacture or fabrication 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
52 SCC	in	The percentage for manufacture and fabrication overheads is	%		
		If Option C, D, or E is used	Data for both schedules of cost components		
61 SCC & 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 SCC & SSCC	in	The percentage for design overheads is	%		
63 SCC & SSCC	in	The categories of design employees whose travelling expenses to and from the Working Areas are included as a cost of design of the <i>works</i> and Equipment done outside the Working Areas are:			
		If Option C, D or E is used	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	%		
22 in SSCC		The rates of other Equipment are:	Equipment	Size or capacity	Rate

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

How work is priced and assessed for payment

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

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

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

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

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

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

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

Function of the Activity Schedule

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

Link to the programme

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

Preparing the *activity schedule*

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

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

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

- 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*

Use this page as a cover page to the *Contractor's activity schedule*.

Replacement of Tutuka Power Station Hydrogen Generating Plant					
Item No.	Description	Unit	Quantity	Rate	Amount
	ESKOM TUTUKA POWER STATION				
	H2 PLANT UPGRADE				
	PRELIMINARY AND GENERAL				
No 1	FIXED CHARGE ITEMS				
1.1	Establishment of Facilities on the Site (Offices, Storage Shed, Ablution facilities, Tools & Equipment, etc.)	SUM	1		
1.2	Safety File	SUM	1		
1.3	Medicals, Inductions and Safety Equipment (SHEQ)	SUM	1		
1.4	Water supplies, electric power, communications, dealing with water, and access.	SUM	1		
1.5	Removal of site establishment.	SUM	1		
No 2	TIME RELATED ITEMS				
2.1	Offices and Storage sheds	SUM	1		
2.2	Ablution and latrine facilities.	SUM	1		
2.3	Living accommodation.	SUM	1		
2.4	Plant and Equipment hire	SUM	1		
2.5	Transport of staff to site for the duration of the project	SUM	1		
2.6	Safety Officer	SUM	1		
2.7	Supervision for duration of construction (Project Management)	SUM	1		
No 3	DECOMMISSIONING				

3.1	Removal and decommissioning of old H2 Plant Equipment	SUM	1		
No 4	DELIVERY				
4.1	Delivery of Construction material to site with all its ancillaries(Mechanical, Electrical, C&I, All accessories)	SUM	1		
No 5	MANUFACTURE, SUPPLY AND INSTALLATION				
5.1	Hydrogen Electrolysis plant producing at 15 Nm3/hour or more	SUM	1		
5.2	Metering station	SUM	1		
5.3	New double jacketed hydrogen pipework of 50m with monitoring system.	SUM	1		
5.4	Receiver inlet panels	No.	4		
5.5	Receiver outlet panels	No.	4		
5.6	Hydrogen cylinder panels	SUM	1		
5.7	Hydrogen cylinder pallet panels	No.	3		
5.8	Nitrogen cylinder panels	No.	2		
5.9	Water panels	SUM	1		
5.10	IS loop certification	SUM	1		
5.11	Local IA certification	SUM	1		
5.12	Issuing of Electrical plant reticulation - Certificate of Compliance	SUM	1		
5.13	Interconnecting piping design calculations	SUM	1		
5.14	Electrical design review and sign off	SUM	1		
5.15	Supply, fabrication and installation of Interconnecting plant piping on site	SUM	1		
5.16	Mechanical design review and sign off	SUM	1		
5.17	Cabling installation including cable racking and terminations	SUM	1		
5.18	Supply of all cabling and racking material as per the scope requirement	SUM	1		
5.19	Plant gas COC	SUM	1		

5.20	Supply and Installation of new door(s) as per Eskom requirements	SUM	1		
5.21	Supply all consumables required to execute the works	SUM	1		
5.22	Provision for interfacing to the Yokogawa System	SUM	1		
5.23	Contractor to conduct the following studies:				
	HAZOP/HAZLOC studies	SUM	1		
	Structural Analysis/Assessment	SUM	1		
5.24	Supply and Installation of all Control & Instrumentation such a cabling, but not limited. Contractor to provide as per the S.O.W requirement	SUM	1		
5.25	Supply & Installation of all mechanical ancillaries as per S.O.W requirements	SUM	1		
5.26					
	COMMISSIONING				
1	Testing and commissioning of the works	SUM	1		
2	Preparation of Operation & Maintenance Manuals & As built-Drawings	SUM	1		
3	Training of Eskom Staff personnel	SUM	1		
4	Labelling of plant as per approved Eskom Standards including safety signages	SUM	1		
5					

Document reference

No of
pages

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C3.2	<i>Contractor's Works Information</i>	
	Total number of pages	

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1 Description of the works

1.1. Executive overview

The existing Hydrogen Generating Plant at Tutuka Power Station has been in service since construction of the power station. The plant is aged, maintenance and repair spares are no longer available for purchase, the hydrogen production philosophy of this plant is outdated and no longer conforms to updated national and Eskom hydrogen safety standards. Due to the age of the plant, it has become highly unreliable and requires excessive maintenance and intervention, as a result it does not produce adequate hydrogen required to maintain the receiver levels and the power station will have to procure hydrogen gas in order to have ample hydrogen to supply all the generators.

Tutuka Power Station therefore requires the manufacture and installation of a new hydrogen generating plant, which will ensure that the generator requirements are met at all times. This engineering change will ensure a reliable source of hydrogen production and minimise cost in terms of procuring from hydrogen suppliers, as well as eliminating the risk of unit trips and outage delays due to lack of hydrogen capacity.

The power station requires the following to be met:

- The hydrogen plant capacity shall not be less than the current capacity of 14,4 Nm³/hour.
- Provide the power supply required for the new plant.
- Investigate the location of the current Hydrogen plant to suit the new plant and ensure the building is suitable and complies with required standards.
- Ensure the four receivers are suitable for continued use.
- Ensure the pipework to the units is suitable for continued use.
- Decommission the old hydrogen generating plant.

The scope of work covers the mechanical, electrical, structural and control and instrumentation technical requirements for the hydrogen generating plant project at Tutuka Power Station. The contractor to provide such discipline during the execution of the works.

1.2. Employer's objectives and purpose of the works

The objective of the works is to secure reliable and safe Hydrogen supply to the Tutuka Power Station turbo generators by installing a Hydrogen generating plant that meets National Safety and Environmental regulations and standards. This will allow for the decommissioning of the existing aged, and unsafe generating plant which uses asbestos as part of the electrolysis plant, to a safe, reliable and maintainable plant.

The new plant will ensure security of Hydrogen supply by eliminating the need for reliance of procuring Hydrogen bottles from external suppliers.

1.3. Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AC	Alternating Current
AKZ	Anlagen Kennzeichnung
C&I	Control and Instrumentation
CD	Compact Disk
DC	Direct Current
DCS	Distributed Control System
DVD	Digital Video Display
EMPA	Engineering Management Plan
FMECA	Failure Modes, Effects and Criticality Analysis
H ₂	Hydrogen
HAZLOC	Hazardous Location
HAZOP	Hazard and Operability Study
ITP	Inspection and Testing Plan
MCP	Multiple Cylinder Pack
O ₂	Oxygen
OEM	Original Equipment manufacturer
OHS	Occupational Health and Safety
PER	Pressure Equipment Regulation
P&ID	Piping and Instrumentation Diagram
PLC	Programmable Logic Controller
QA	Quality Assurance
QC	Quality Control
RACI	Responsible, Accountable, Consulted, Informed
RAM	Reliability Operating Capability
ROC	Required Operating Capability
SANAS	South African Accreditation System
SHEQ	Safety, Health, Environment and Quality

2 Management and start up.

2.1 Management meetings

NOTE to Contractor: This Section of the contract to be read in conjunction with the document titled Hydrogen Generating Plant Upgrade Project Scope of Work with Unique Identifier “15ENG GEN-2255”

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk and compensation meetings	As and when the needs arise	Project board room/ Virtual Meeting	Key members and Contractor
Overall contract progress and feedback	Monthly on _____ at ____ (TBC)	Project board room/ Virtual Meeting	Employer, Contractor, Supervisor, and ____
Contractor safety meeting	Monthly for 2 hrs	Production boardroom/ Virtual Meeting	Employer, Contractor
Project progress meeting	Daily on installation program and monthly on design	Project board room/ Virtual Meeting	Employer, Contractor
Early Warning Meeting	As and when the needs arise	Virtual Meeting/Project Boardroom	Key members and Contractor

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the works. Records of these meetings shall be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

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

2.2 Documentation control

Contractor refers to the Employer's scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

2.3 Health and safety risk management

The Contractor shall comply with the health and safety requirements contained in this Works Information.

Project will adhere to the requirements of the applicable South African Legislation, Eskom Policies, Procedures and Processes. Prior to the Execution of activities, Eskom will provide the Appointed Contractor with a Baseline Risk Assessment as well as SHEQ Specifications for Contractors(14RISK SRM-084) for the project. The Appointed Contractor will be required to provide a Safety, Health, and Environment Plan (SHE) based on the Client documented SHEQ Specification. The SHEQ Plan will be reviewed by representatives of Tutuka Project Management and Safety Department. The Appointed Contractor will also be required to

provide an Environmental Management Plan specific for the projects. The Environmental Management Plan will be reviewed by Tutuka Environmental Officer.

During the compilation of the Safety file, the Appointed Contractor will be required to use a SHE Contractor checklist that will be provided by the Employer. The SHE File will be reviewed by Tutuka Safety Officer. If areas for improvement are applicable, for all the documents submitted by the Contractor this will be communicated to the contractor and the contractor will require to address the comments. ALL contractor documents must be approved by the client (Eskom) prior to work being executed.

The SHE plans shall provide details as to the management of specific aspects; as identified within the Client SHE Specification requirements. i.e., creation and implementation of pro-active and reactive plans to effectively address emergency, the emergency communications procedure, incident investigation reports.

- The *Contractor* ensures safety awareness at all times through continuous training.
- The *Contractor* shall at all times be responsible for the supervision of his employees, agents and sub-*Contractors*, and shall take full responsibility and accountability in ensuring that they are competent, compliant and aware of the legal requirements and other applicable requirements, and shall execute the *works* accordingly.
- The *Contractor* shall ensure that all statutory appointments, and appointments required by any Eskom Policy, standard and Procedure, are recorded in writing and that all its appointees and/or agents fully understand their responsibilities and are trained and competent to execute their duties.
- The *Employer*, or any person appointed by the *Employer*, may, at any stage during the term of the contract:
 - Conduct health and safety audits by a competent person regarding all aspects of compliance with the SHEQ requirements, at any off-Site place of work, or the Site establishment of the *Contractor*.
 - Refuse any employee, sub-*Contractor* or agent of the *Contractor* access to the premises if such person has been found to commit an unsafe act or if any work is found not to be compliant or authorized.
 - Issue the *Contractor* with a STOP WORK ORDER should the *Employer* become aware of any unsafe working procedure or condition, or any non-compliance.
- The *Contractor* shall immediately report all incidents as well as any threat to safety and health of which he becomes aware at the Site, to the *Project Manager*.
- The *Contractor* agrees that the *Employer* is relieved of any and all of its responsibilities and liabilities in terms of the Occupational Health and Safety Act no 85 of 1993 in respect of any acts or omissions of the *Contractor*, and the *Contractor's* employees, agents or sub-*Contractors*, to the extent permitted by the Occupational Health and Safety Act no 85 of 1993.
- The *Contractor* shall provide a health and safety plan based on the *Employer's* Safety, Health and Environmental Specification

All persons entering the Site shall undergo the *Employer's* safety induction course

Safety of workers

The *Contractor* is to ensure the safety of all persons working on the Site. Any hot work, including welding, will be applied for in accordance with the permit to work system. No hot work will be allowed on Site unless a hot work permit is granted in writing.

The *Contractor* shall ensure that all welding, flame cutting and grinding work is properly screened to protect persons from arc flashes or eye injuries. Precautions shall be taken to prevent any objects, welding or grinding sparks from falling beyond the immediate working area. Ear protection and all required PPE shall be provided to all personnel by the *Contractor*.

Fire Protection

The *Contractor* shall ensure that adequate firefighting apparatus is provided in all his work sites, and that his employees are trained in the use of this apparatus.

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

In case of a fire, the *Contractor* shall immediately report the location and extent of the fire to the **Electrical Operating Desk using the Emergency Number 5400**. The *Contractor* shall take the necessary action to safeguard the area to prevent injury and spreading of the fire.

Titanium fires are a possibility and are extremely violent if it occurs, water cannot be used to extinguish as water addition will lead to explosions. The *Contractor* will as part of tender provides a method statement to prevent Titanium fires and possible risk that might occur.

First aid

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

Housekeeping

It is the *Contractors* responsibility to ensure that the Site is cleaned daily. All electrical cables and hoses are routed so as not to cross unprotected over floors and walkways. All equipment is packed neatly without interference to access. The *Contractor* is responsible for the removal of any scrap material to the designated scrap area on a daily basis. It is the *Contractor* responsibility to provide own transport for this activities.

Barricading

Access to danger zones is restricted using handrail type guards at least 1.2 meters high and able to block access to the danger zone. Symbolic safety signs depicting 'Danger' and 'No entry' are attached to the guards. This includes access during the taking of X-rays.

The *Contractor* must supply their own solid barricading material (SANS approved) and no barricading net will be allowed on site. The *Contractor* must also barricade the work area and Materials to be used to carry out work. Barricading must not block all access routes for other *Contractors* and staff. Refer to barricading Tutuka mechanical instruction unique identifier no: 15MNT MMD.1295

Radiographic Examinations

When radiographic tests are carried out in the plant by others, the danger area is evacuated with the exception only of authorized radiographic workers, and thereafter barricaded. To ensure that employees and contract staff working in Eskom premises are not exposed to more radiation than is reasonable level, compliance is with the Tutuka Power Station procedure 'Requirements and Rules for Radiation Protection and Safety of Radiation Sources', reference number 15MNT MSS PC-1267

2.4 Environmental constraints and management

The *Contractor* shall comply with the environmental procedures and work instructions as approved in the Safety File.

2.5 Quality assurance requirements

- The contractor must conform to Quality Management System-ISO 9001:2015 requirements
- The Contractor will fully conform to the requirement of the Supplier Quality Requirement Specification (QM-58), standards, procedures, Eskom policies and etc
- All activities that needs to have Quality control plans (QCP) must be in place which will be developed by the contractor and must be approved by Eskom Engineer prior execution of work.
- The service provider might be subjected to audits. reviews and during the execution of work the client must perform inspections and spot- checks as part of monitoring
- All documents that will be arising from this project must remain with the client
- Where applicable the service provider must conform to any statutory requirements
- All documented information as per category 2, to submitted prior work execution for purpose of evaluations
- Where the principal service provider will be sub-contracting, the principal service provider must provide the documented information on how to control the sub-contracted service provider
- The quality assurance requirements must also be imposed on sub-*Contractors* and suppliers of material.
- Apart from any statutory data packages required, the *Contractor* also compiles a data package of the relevant drawings, test certificates, etc., should conform to what is specified in the works information.
- The *Contractor* utilizes their own quality documentation forms for requesting access, erection checks, etc. These request forms must be submitted to the Employers at least one week prior to the requested activity, or as agreed to by the Project Manager.

2.6 Programming constraints

The *Contractor* shall submit a single programme that incorporates the programmes of all of his sub-*Contractors* if any. The interface points between his different sub-*Contractors* as well as the interface points between the sub-*Contractors* and the *Contractor* are to be clearly identified in the programme. Project Key Milestones Dates are to be incorporated into the programme.

The baseline must incorporate all Project Activities or efforts necessary to complete the Project, including the *Contractor's* engineering, procurement, construction and his sub-*Contractor's* and supplier's work. The *Contractor* shall ensure that all responsible parties not within the *Contractor's* control give the *Contractor* all the necessary cooperation in providing the necessary information needed concerning the details of the work to be scheduled, as well as providing reasonable support to assist the *Contractor* with the integration of all necessary work Activities or *Employer* Milestones into the *Contractor's* Schedule network.

A programme shall be submitted and shall include Milestone dates. The programme shall not reflect any obvious errors related to sequence or timings of the *works*.

For execution, the Project Calendar must be based on a 5 days 12 hours per day working week (60 hour week) and the calendar must be clearly defined and accepted by the *Project Manager* in the Contract Document.

The Schedule will be composed of respective detailed Activities tied together logically. The detailed activity shall comprise of but not limited to the following:

- Sufficient information such as activity duration and description so as to be able to measure accurate progress within the required update period.
- A clearly defined starting point.
- A clearly defined completion point.

- A clear description of the activity to be performed.
- A single source of responsibility or ownership.

2.7 Contractor's management, supervision and key people

- a. Pr.Eng/Pr.Tech registered with ECSA
- b. Project Manager
- c. Quality Control Officer /Quality Control Manager
- d. Site manager
- e. Construction supervisor
- f. Competent Machinery Operators
- g. Safety officer
- h. Fire watch
- i. First Aider, and

All statutory required appointed people as per the Construction regulation and legislative.

2.8 Invoicing and payment

Invoicing and payments of the supplier will be done according to agreed terms and conditions of the NEC - Contract. The project Manager with the Supplier's project manager will assess the proposal for payment based on the scope done and agree on activities to be paid. The Quantity surveyor will check the cost for work done for correctness and verify prior to cost being processed.

Appointed 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 Appointed 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;
- Purchase order450... number
- Issue separate invoices in respect of each Order numbers
- Issue separate invoices in respect of each Unit
- Rate / Activity to be claimed in accordance with contract
- CPA need to refer back to Basic Invoice, together with calculations in accordance
- with contract
- CPA invoice need to be invoiced separately
- Local and Foreign invoices to be invoiced separately
- Incorrect claim (invoices) should be cancelled with a credit note referring to the incorrect invoice and issue a new invoice.

2.9 Insurance provided by the Employer

Refer to Z Clause - 'Z13.2 of the contract'.

2.10 Contract change management

All changes relating to the contract will be treated accordingly. The following process will be followed: Change will be initiated, followed by negotiation and approval, Implemented, monitored and closed out accordingly. Reference shall also be made to Eskom Procurement & Supply Chain management procedure and policy, Engineering Change Management Procedure as well as Eskom Project Life Cycle Model.

2.11 Records of Defined Cost, payments & assessments of compensation events to be kept by the Contractor

As per the NEC ECC3 contract both parties have an obligation to keep contract records for a period of five years. Project Manager shall be given access to the records where needs arise and shall be provided in hard copy or electronically

2.12 Training workshops and technology transfer

Supplier shall ensure that adequate training of the new plant to enable the personnel to perform all required on-load and outage related maintenance is provided on completion of the works. Training together with all associated training manuals (including special tools) for the operation and maintenance of the plant shall be provided by the Contractor for effective and efficient operations. A minimum of 10 people shall be trained. The Employer will issue the names of the people to be trained to the Contractor.

3 Engineering and the Contractor's design

3.1 Employer's design

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

3.2 Parts of the works which the Contractor is to design

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

The Contractor designs the parts of the works which the scope of works states he is to design. The Contractor submits the particulars of his design as per the requirements to the Employer for acceptance. The Contractor does not proceed with the relevant work until the Employer has accepted his design. The Contractor may submit his design for acceptance in parts if the design of each part can be assessed fully.

3.3 Procedure for submission and acceptance of Contractor's design

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

3.4 Other requirements of the Contractor's design

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

3.5 Use of Contractor's design

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

The Employer may use and copy the Contractor's design for any purpose connected with construction, use, alteration, or demolition of the works unless otherwise stated in the Works Information and for other purposes as stated in the Scope of Work

3.6 Design of Equipment

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

3.7 As-built drawings, operating manuals and maintenance schedules

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

The *Contractor* employs key people as stated in the Section 2.7 of this Contract. All personnel must possess the relevant skills, knowledge and qualifications, including professional qualifications where necessary to execute the *works*. Non-skilled labour shall be sourced only locally. The list of local accommodation shall be provided by the *Employer*. And the *Employer* has the right to submit a list of non-skilled and skilled labour to the *Contractor* for employment.

4.1.2 BBBEE and preferencing scheme

The *Contractor* shall comply with Eskom's BBBEE requirements and SDL&I (Supplier Development Localisation and Industrialisation) policy. The *Contractor* to comply with and fulfils the obligations in respect of the SD &L requirements in as provided for. Failure to comply with his SDL&I obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.

4.1.3 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)

None

4.2 Subcontracting

4.2.1 Preferred subcontractors

If the *Contractor* subcontract, He is responsible for providing the works as if he had not subcontracted. The contract agreement between the *Contractor* and the *Employer* applies as if a Sub-*Contractor's* employees and equipment were the *Contractors*. The *Contractor* shall appoint *Subcontractors* as per the Eskom Supplier's Development Localisation and Industrialisation guidance. Advice shall be sought from the SDL&I Advisor.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

The *Contractor* shall submit the proposed condition of contract for each *Subcontractor* to the project manager for acceptance unless otherwise the *Project Manager* agrees that there is no submission required. Sub-contracting to align with skills and competency aligning with *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

4.2.3 Limitations on subcontracting

The limitation in terms of percentage that the *Contractor* subcontract will be agreed upon by both parties unless otherwise stated on the tender returnable as per the Procurement and Supply Chain management policies and procedures. Specialised work shall be subcontracted accordingly.

Sub-contracting to align with skills and competency aligning with *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

4.3 Plant and Materials

4.3.1 Quality

The *Contractor* to refer to documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

4.3.2 Plant & Materials provided “free issue” by the Employer

All Plant and Material shall be provided by the *Contractor* as per the Scope of work to ensure smooth execution of the works.

4.3.3 Contractor’s procurement of Plant and Materials

Contractor refers to the *Employer’s* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

All materials and apparatus that is used for the erection/Construction and the installation of all systems shall be new and of a good quality. The *Contractor* shall present technical information and brochures for equipment and finishes

All materials shall be new, undamaged, free of rust or other defects and shall be of the best quality. Materials shall comply with the relevant SANS specifications where applicable.

The *Contractor* shall upon the request of the *Employer*, furnish him with documentary proof to his satisfaction that the materials are of the quality specified. Samples of materials for testing, if required, shall be supplied by the *Contractor*, free of charge.

Where applicable the material and apparatus shall in terms of quality, manufacture testing and performance comply with the relevant specifications of the following:

- a. The South African Bureau of Standards (SANS)
- b. Eskom Standards and procedures

Where material or apparatus that are used comply with the standard of any other recognised standards organisation, this should be clearly stated to avoid any ambiguity.

The *Contractor* shall provide a certificate from a recognised bureau of standards for material that is used in the contract.

All exposed equipment and finishes shall be submitted to the *Employer* for approval in sample form. Samples of all equipment or material shall on request be made available to the *Employer* before they are installed.

4.3.4 Spares and consumables

Contractor refers to the *Employer’s* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

The *Contractor* will supply him/herself with consumables required to execute the works.

4.4 Tests and inspections before delivery

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

4.5 Marking Plant and Materials outside the Working Areas

The *Contractor* shall book all the equipment's and materials at the security gate, so that they can be identifiable on completion of the work for removal from site. Marking plant and materials outside the working areas to be as per clause 71.1 of the NEC ECC.

4.6 Contractor's Equipment (including temporary works).

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

Equipment must conform to the *Employer's* Safety Standards. *Contractor* shall provide own compressors and air receivers' which are tested and approved by the third party inspection authority. DB boards will not be connected unless a valid Certificate of Compliance is issued by competent persons. Lifting equipment to be registered and inspected by an authorised person. The *Contractor* is liable for safe storage of his own tools and equipment to be used during execution.

5. Construction

5.1 Temporary works, Site services & construction constraints

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

All vehicles shall comply with the Road Traffic act. Vehicle inspections will be conducted on a daily basis and check sheets shall be kept at the *Contractor's* offices. All vehicle entering site shall have permits as per Eskom's requirements. All *Contractor's* employees shall undergo induction and shall be provided with temporary permits for ease of access to site. The temporary permit shall not be of a period longer than 12 months at the most. No employee shall make entry to Eskom premises without a valid temporary access permit.

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

Persons employed by the *Contractor*, and *Contractor's* visitors, may not enter areas not related to the *works* without the *Employer's* permission.

The *Contractor* shall keep daily records of his employee's working timesheets. Records of employee's conduct and any disciplinary hearings will be in accordance with statutory procedures. *Contractor* shall comply to Labour Relations Act 66 of 1995 as amended and Basic Conditions of Employment Act as amended.

The working hours for Tutuka Power Station is from 07H00 -16H15. The *Contractor* and its employees shall however be requested to work according to the schedule that may arise from site at any given situation/time. The *Employer* may from time to time request all *Contractors* and *Contractors* on site to attend Work stoppage which then the supplier's and *Contractors* will be requested to attend.

5.1.3 Health and safety facilities on Site

The medical centre is used by all people on site for injuries and first aid related issues. The Fire Department is also available for fire and other related emergencies. Their respective contact details to be provided during induction.

COVID-19 Protocols as per Eskom procedures and policy inclusive of relevant government protocols shall be always adhered to.

5.1.4 Title to materials from demolition and excavation

All demolition/scrap material to be discarded in a location to be decided when the contract has been awarded. The *Contractor* has no claim to any material from any demolition works.

The Contractor has no title to an object or historical or other interest within the site. The contractor does not move such an object unless instructed to do so by the Employer. The Contractor is not allowed to use any materials for private usage or on any other Sites.

5.1.5 Cooperating with and obtaining acceptance of Others

The *Contractor* co-operate with Others in obtaining and providing information which they need in connection with the works. The *Contractor* is also expected to co-operate with other *Contractors* and other parties involved including sharing the working area with them where possible.

5.1.6 Publicity and progress photographs

It is prohibited for *Contractor* or any of the *Contractors* suppliers or *Subcontractors* to publish and information (including documentation and photographs) relating to this works or Eskom premises.

5.1.7 Contractor's Equipment

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

The *Contractor* provides all Equipment that is required to complete the *works*.

The *Contractor's* is required to ensure that all Equipment does not impair the operation or access to the plant. The *Contractor* provides all or any temporary or expendable materials required for the storage of material.

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's* use of any Equipment which, in the opinion of *Project Manager*, does not conform to the foregoing.

Off-loading and material handling Equipment such as cranes and forklifts should be provided by the *Contractor*. Off-site requirements for cranes and forklifts are not provided by the *Employer* and shall also be arranged by the *Contractor* at his own expense.

The *Contractor* submits a list of all tools and equipment entering site. Equipment and tools not declared will become the *Employer's* property. On completion of the project, all tools and equipment will be removed only with permission from the *Project Manager* on the applicable approved *Employer* documents.

5.1.8 Equipment provided by the Employer

The *Employer* shall make provision for scaffolding only during the implementation of the projects as and when required by the *Contractor*.

5.1.9 Site services and facilities

The *Employer* shall grant the *Contractor* to make use of the following facilities which the *Contractor* has to ensure that they are within his reach at his own cost:

- Provide water source or point in a close by area where the *Contractor* shall tap on. Contractor to provide all the necessary connection resources to the closest point for connection which would have been identified by the Employer.
- Provide electrical power point - but *Contractor* to provide his own cables for connections
- A medical centre service is within reach and the *Contractor* can make use of it.
- Station ablution facilities are available, and the *Contractor* can make use of them unless otherwise the *Contractor* provides at his own yard.
- A piece of area for site establishment

5.1.10 Facilities provided by the Contractor & the Employer

Site Facilities, Utilities and Services	Provided by		
Item	Contractor	Employer	Details
Field Office			
Field office structure	X		
Field office furniture	X		
Field office equipment	X		
Field office supplies	X		
Artisan Staff change facilities	X		
Area for site establishment		X	
Fabrication shops	X		
Resources (Including site contacts)			
Safety Watch/Officer	X		Form part of Contractor's Crew to provide the Scope of work
Fire Watch	X		
Qualified crane operators	X		
Riggers	X		
Tools			
Erection tools	X		
Special erection tools	X		
Equipment			
Construction equipment	X		
Contractor equipment operator testing	X		
Communication			
Internet connection	X		
Radio & cell phone communication	X		
Electrical Power			
Connection to main power source		X	

Site Facilities, Utilities and Services	Provided by		
Item	Contractor	Employer	Details
and maintenance			
Construction power primary distribution system and maintenance		X	
Construction power Contractor's distribution system	X		
Construction power Contractor's distribution system maintenance	X		
Structures interior temporary lighting and maintenance	X		
Contractor specific work area temporary lighting and maintenance	X		
General areas site lighting and maintenance		X	
Contractor areas site temporary lighting and maintenance	X		
Water - potable and non-potable			
Portable water source supply		X	Contractor to provide all the necessary containers to collect water to the nearest point/source
Sanitary Facilities			
Contractor's structures construction sanitary facilities and maintenance	X		
Access Roads			
Primary access roads and maintenance		X	
Contractor specific access roads and maintenance	X		
Primary access road dust control		X	
General Work related dust control	X		
Provide parking area and maintenance		X	
Storage Facilities			
Onsite lay-down space		X	During Construction stage
Contractor storage area maintenance	X		
Tool storage facilities	X		
Security			
Overall site security		X	
Overall site security access card		X	

Site Facilities, Utilities and Services	Provided by		
Item	Contractor	Employer	Details
Medical Facilities			
Onsite first aid/medical services	X	X	Contractor maintain his safety aid kit at all times
Medical Centre emergency ambulance		X	
Fire Protection			
Provide own site fire extinguishers	X		
Provision of fire equipment & vehicles	X		
Clean-up			
General refuse offsite disposal		X	
Contractor general refuse collection and onsite disposal	X	X	Contractor to clean his/her area and use available bins on-site which are to be collected by the Employer
Contractor field office cleaning service	X		
Hazardous waste disposal and clean up	X		
Scaffolding			
Scaffolding supply/erection		X	
Food Services			
Allowed onsite - Yes/No	X		Contractor to provide meals for his teams. Allowed to bring to site
Tuck-shop		X	Temporarily closed

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

The day-to-day activities of the surrounding buildings and operation of the station must not be disrupted during execution of the works.

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

Information related to the underground services is limited to the Employer's drawings. The *Contractor* shall exercise cautionary measure for any works that relates to underground service.

5.1.13 Control of noise, dust, water and waste

The *Contractor* maintains a high standard of cleanliness during the conduct of his activities at the Power Station. This includes areas allocated for storage of materials, site offices etc. to the satisfaction of the *Project Manager*. The *Contractor* keeps these areas clean and free from accumulation of waste materials and refuse regardless of the source.

The *Contractor* ensures during sweeping and dusting, that a minimum amount of dust is liberated into the atmosphere. Cleaning by vacuum cleaners is preferred and the use of compressed air for cleaning is prohibited unless otherwise.

The *Contractor* is responsible for the prompt removal of all waste to a designated disposal area. The disposal area will be on or in the vicinity of the Power Station and be indicated by the *Project Manager*.

For the purpose hereof, "waste" any matter, whether liquid or solid or any combination thereof, which is a by-product, residue or remainder of any process or activity carried out in connection with the works and which is not reused on the Site in the ordinary course of carrying out the works within seven days of production.

Bins and containers are emptied and waste removed to the designated area at least once a week. All the temporary storage areas for bins and containers are kept tidy and not constitute a nuisance to others. The *Contractor* takes all required steps to avoid spillage of waste alongside the bins and containers during removal and disposal thereof.

All waste that cannot be contained in either a bin or container is placed on a temporary waste site which the Project Manager identifies. The waste is removed as soon as possible but, in any event, at least once a week. No burning of waste is allowed at the Power Station.

Hazardous waste is dealt with in accordance with the safety, health and/or environmental requirements of the works and the *Contractor* is solely responsible for the proper disposal thereof.

5.1.14 Sequences of construction or installation

The sequence must be such that minimal disturbance to normal operations and logistics is experienced. The *Contractor* must submit a construction method statement, program, QCP, and EMP to the *Employer* for the *Employers* approval before commencement of any works. The *Contractor* shall give access of the working areas to Others where technical reasons are concerned.

5.1.15 Giving notice of work to be covered up

The *Contractor* is responsible for giving notice of work to the department of labour.

Additionally, the *Contractor* shall notify the Employer in advance when construction works commences.

5.2 Completion, testing, commissioning and correction of Defects

5.2.1 Work to be done by the Completion Date

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

	Item of work	To be completed by
	As built drawings, Maintenance, and operating manuals	Within 2 months after Completion of the works
	Training of Employer's employees	Immediately after Completion is achieved

5.2.2 Use of the works before Completion has been certified

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

5.2.3 Commissioning

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

5.2.4 Start-up procedures required to put the works into operation

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

5.2.5 Access given by the Employer for correction of Defects

The *Contractor* will be given access for correction of defect. Notice of defect correction will be issued as per the NEC- ECC conditions. And correction will be granted as per the terms in the contract.

5.2.6 Performance tests after Completion

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

5.3 Investigation, survey and Site clearance

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

5.4 Building works

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

5.5 Civil engineering and structural works

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

5.6 Electrical & mechanical engineering works

Contractor refers to the *Employer's* scope of work as outlined in the documents with unique identifier 15ENG GEN-2255 Titled Hydrogen Generating Plant Upgrade Project Scope of work (Tutuka Power Station)

6. 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.

Drawing number	Revision	Title
0.61/11512	0	Hydrogen Plant Foundation Details
0.61/9066	1	Equipment Layout
0.61/9067	2	Flow Sheet
0.61/9071	1	General Arrangement and Details of H2 Storage Vessels
0.61/1507	1	Bill of Material
0.61/11505	0	Valve List
0.61/15537	0	380V Hydrogen Generator Plant Board

7. Eskom Standards and SANS Codes

Standard/Code number	Title
240-56227413	Hydrogen Systems Standard
ISO 9001	Quality Management Standard
240-56356396	Earthing and Lightning protection standard
240-56227443	Requirements for Control and Power Cables for Power Stations Standard
ISO 22734-1	Hydrogen Generators using Water Electrolysis Process – Part 1: Industrial and Commercial Applications
240-56536505	Hazardous Location standard
SANS 10142-1	South African National Standard for the Wiring of Premises
240-89147446	Instrument Piping for Fossil and Hydro Power Plant standard
240-56355843	Pressure Measurement System Installation standard
240-56355888	Temperature Measurement System Installation standard
240-56355754	Field Equipment Installation standard
SANS 10108	The Classification of Hazardous Locations and the Selection of Apparatus for use in such locations
SANS 10119	Reduction of Explosion Hazards Presented by Electrical Equipment Segregation, Ventilation and Pressurization

240-56355581	Junction Boxes and Cable termination standard
SANS 1200	Standardised specification for Civil Engineering Construction
SANS 10100	The structural use of concrete
SANS 10160	Basis of structural design and actions for buildings and industrial structures