



NEC3 Engineering & Construction Contract

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

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

for Design, manufacture, testing at works, supply, installation and cold
commissioning of Transformer, Power: Apparent Power: 2.5
MVA/88/6.6kV; Vector Group YNd1; Ester Oil filled; to Snowdon
Substation

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CONTRACT No. [Insert at award stage]

Part C1: Agreements & Contract Data

Contents:

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C1.1 Form of Offer & Acceptance

Offer

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

Design, manufacture, testing at works, supply, installation and cold commissioning of Transformer, Power: Apparent Power: 2.5 MVA/88/6.6kV; Vector Group YNd1; Ester Oil filled; to Snowdon Substation

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

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

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

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

Signature(s)

Name(s)

Capacity

For the
tenderer:

(Insert name and address of organisation)

Name &
signature of
witness

Date

Tenderer's CIDB registration number (if applicable)

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

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

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.

Design, manufacture, testing at works, supply, installation and cold commissioning of Transformer, Power: Apparent
Power: 2.5 MVA/88/6.6kV; Vector Group YNd1; Ester Oil filled; to Snowdon Substation

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*

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
	dispute resolution Option	A: Priced contract with activity schedule
	and secondary Options	W1: Dispute resolution procedure
		X1: Price adjustment for inflation
		X2: Changes in the law
		X4: Parent company guarantee
		X7: Delay damages
		X13: Performance Bond
		X15: Limitation of <i>Contractor's</i> liability for design to reasonable skill and care
		X16: Retention
		X17: Low performance damages
		X18: Limitation of liability
		Z: <i>Additional conditions of contract</i>
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The <i>Employer</i> is (Name):	Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa
	Address	Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg
10.1	The <i>Project Manager</i> is: (Name)	
	Address	Megawatt Park, Maxwell Drive, Sandton, Johannesburg
	Tel	[•]

	Fax	[•]
	e-mail	[•]
11.2(13)	The <i>works</i> are	Design, manufacture, testing at works, supply, installation and cold commissioning of Transformer, Power: Apparent Power: 2.5 MVA/88/6.6kV; Vector Group YNd1; Ester Oil filled; to Snowdon Substation
11.2(14)	The following matters will be included in the Risk Register	1.Design Complications 2.Reliability and performance of equipment 3.Transportation damage 4.Road Transport Embargo 5.Commodity price fluctuations 6.Supplier Failure to deliver 7.Late Deliveries 8.Weather 9.Labour strikes. 10.Non availability of supervisors for installation and commissioning. 11.Safety files 12.Additional risks will be managed by the Parties as they arise
11.2(15)	The <i>boundaries of the site</i> are	Within the Eskom designated storage yard
11.2(16)	The Site Information is in	Part 4: Site Information
11.2(19)	The Works Information is in	Part 3: Scope of Work and all documents and drawings to which it makes reference.
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa
13.1	The <i>language of this contract</i> is	English
13.3	The <i>period for reply</i> is	One (1) week
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	As per the purchase order
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	<i>condition to be met will be stated in the Purchase Order</i> <i>key date</i>
30.1	The <i>access dates</i> are:	will be stated on the Purchase Order
31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	Four (4) after purchase order acknowledgement
31.2	The <i>starting date</i> is	the date the Purchase order is

acknowledged and signed.

32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	four (4) weeks.
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35.1	The <i>Employer</i> is not willing to take over the works before the Completion Date.	
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4 Testing and Defects

42.2	The <i>defects date</i> is	Five (5) years after handover for transformers put into long term storage.
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Latent defect is seven (7) years from the take over date relative to a transformer after the 5 years defect period.

43.2	The <i>defect correction period</i> is	One (1) week. The contractor is to correct the defect within the period or if not possible, then to have responded and submitted to a schedule (to be approved by the Project Manager) for the correction period.
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5 Payment

50.1	The <i>assessment interval</i> is	between the 25 th day and the end of the month of each successive month.
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51.1	The <i>currency of this contract</i> is the	South African Rand.
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51.2	The period within which payments are made is	Thirty (30) days after the submission of a valid Tax Invoice with supporting documentation based on the agreed assessment
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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
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(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,</p> <p>The <i>weather measurements</i> are supplied by</p> <p>The <i>weather data</i> are the records of past <i>weather measurements</i> for each calendar month which were recorded at:</p> <p>and which are available from:</p>	<p>Snowden Substation</p> <p>the cumulative rainfall (mm)</p> <p>the number of days with rainfall more than 10 mm</p> <p>the number of days with minimum air temperature less than 0 degrees Celsius</p> <p>the number of days with snow lying at 09:00 hours South African Time</p> <p>and these measurements:</p> <p>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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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	<p>These are additional <i>Employer's</i> risks</p>	<ol style="list-style-type: none"> 1. Design Complications 2. Reliability and performance of equipment 3. Transportation damage 4. Road Transport Embargo 5. Commodity price fluctuations 6. Supplier Failure to deliver 7. Late Deliveries 8. Weather 9. Labour strikes. 10. Non availability of supervisors for installation and commissioning. 11. Safety files 12. Additional risks will be managed by the Parties as they arise
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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).
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	Johannesburg, South Africa
	The person or organisation who will choose an arbitrator	
	- if the Parties cannot agree a choice or	
	- if the arbitration procedure does not state who selects an arbitrator, is	the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.
12	Data for secondary Option clauses	
X1	Price adjustment for inflation	
X1.1(a)	The <i>base date</i> for indices is	
X1.1(c)	The proportions used to calculate the Price Adjustment Factor are:	CPA will be calculated in compliance with the price adjustment instructions as provided in Part C2: Pricing Data CPA formulae: Refer to excel price activity schedule –“Option X5”
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.
X4	Parent company guarantee	There is no reference to Contract Data in this Option and terms in italics are

		identified elsewhere in this Contract Data.
X7.1	Delay damages for Completion of the whole of the works are	R0.25% per day up to 10% of the delayed portion where after the Employer may terminate the contract
X13	Performance bond	
X13.1	The amount of the performance bond is	R[•].
X15	Limitation of the Contractor's liability for his design to reasonable skill & care	There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.
X16	Retention (not used with Option F)	
X16.1	The <i>retention free amount</i> is	None
	The <i>retention percentage</i> is	2.5%Retention Bond of the purchase order value to be issued and submitted together with the invoice for payment at handover and will be valid for the defects period.
X17	Low performance damages	
X17.1	The amounts for low performance damages are:	The total additional loss above the guarantee level is multiplied by the R/MW given to obtain the performance damage. Determined by using the criteria in schedules A&B and as provided in the signed and approved specification 240-68973110
X18	Limitation of liability	
X18.1	The Contractor's liability to the Employer for indirect or consequential loss is limited to:	R0.0 (zero Rand)
X18.2	For any one event, the Contractor's liability to the Employer for loss of or damage to the Employer's property is limited to:	the amount of the deductibles relevant to the event
X18.3	The Contractor's liability for Defects due to his design which are not listed on the Defects Certificate is limited to	The greater of <ul style="list-style-type: none"> the total of the Prices at the Contract Date and the amounts excluded and unrecoverable from the Employer's assets policy for correcting the Defect (other than the resulting physical damage which is not excluded) plus the applicable deductible as at contract date.
X18.4	The Contractor's total liability to the Employer for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	the total of the Prices other than for the additional excluded matters. The Contractor's total liability for the

additional excluded matters is not limited.

The additional excluded matters are amounts for which the *Contractor* is liable under this contract for

- Defects due to his design which arise before the Defects Certificate is issued,
- Defects due to manufacture and fabrication outside the Site,
- loss of or damage to property (other than the *works*, Plant and Materials),
- death of or injury to a person and
- infringement of an intellectual property right.

X18.5 The *end of liability date* is

(i) 7 years after the *defects date* for latent Defects and

(ii) the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.

A latent Defect is a Defect which would not have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period.

If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.

Z The Additional conditions of contract are

Z1 to Z15 always apply.

Z1 Cession delegation and assignment

- Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*.
- Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

Z2 Joint ventures

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

- Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.
- Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

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

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

Z4 Confidentiality

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

Z5 Waiver and estoppel: Add to core clause 12.3:

- Z5.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties,

the *Project Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

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

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

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

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

Z8 Notifying compensation events

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

Z9 Employer's limitation of liability

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

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

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

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

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

Z12 Ethics

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

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

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

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

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

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

Z13 Insurance

Z 13.1 Replace core clause 84 with the following:

Insurance cover 84

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

INSURANCE TABLE A

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

Z 13.2**Replace core clause 87 with the following:**

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

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.

Month	Weather measurement				
	Cumulative rainfall (mm)	Number of days with rain more than 10mm	Number of days with min air temp < 0 deg.C	Number of days with snow lying at 08:00 CAT	[Other measurements if applicable]
January	[•]	[•]	[•]	[•]	
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*

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	%
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:	CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .

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

11.2(3)	The <i>completion date</i> for the whole of the works is	
11.2(14)	The following matters will be included in the Risk Register	
11.2(19)	The Works Information for the <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
	Data for Schedules of Cost Components	<i>Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).</i>
A	Priced contract with activity schedule	Data for the Shorter Schedule of Cost Components

PART 2: PRICING DATA

ECC3 Option A

Document reference	Title
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

Design, manufacture, testing at works, supply, installation and cold commissioning of Transformer, Power: Apparent
Power: 2.5 MVA/88/6.6kV; Vector Group YNd1; Ester Oil filled; to Snowdon Substation

activities in order to fulfil the obligation to complete the *works* for the tendered total of the Prices.

- Understands there is no adjustment to the lump sum Activity Schedule price if the amount, or quantity, of work within that activity later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event.

C2.2 the *activity schedule*

Refer to activity schedule named "Copy of Price Activity Schedule -2.5 MVA"

PART 3: SCOPE OF WORK

Document reference	Title
C3.1	This cover page <i>Employer's Works Information</i>

C3.1: EMPLOYER'S WORKS INFORMATION

Refer to Works Information (Transmission Installation and Commissioning of the Units)

Works Information

THE DESIGN, DETAILED ENGINEERING, MANUFACTURE, TESTING (AT *CONTRACTOR'S WORKS*), SUPPLY, DELIVERY AT POINT(DAP), INSTALLATION, AND COLD COMMISSIONING OF A RANGE OF COMPLETE FULLY FUNCTIONAL POWER TRANSFORMERS AND SHUNT REACTORS AT VARIOUS SITES INCLUDING STORAGE SITES

(TRANSMISSION UNITS)

1	Description of the <i>Works</i>
2	Work to be performed by the <i>Contractor</i> for the <i>Works</i>
3	Accountability for the Works installation
4	Programme
5	Completion
6	Quality management
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1. DESCRIPTION OF THE WORKS

The *works* includes design, detailed engineering, design review, manufacturing, testing (at *Contractor's* works), shipping, local transport off-loading, , installation and assembly, oil-filling, testing, and commissioning a range of complete fully functional power transformers and shunt reactors at various sites (including storage sites).

- The *works* is done strictly in accordance with the *Employer's* Specifications: Document number 240-68973110 - , Specification for Power Transformers rated for 1.25MVA and above and with highest voltage of 2.2kV or above, and,
- Document number 240-60725684 Specification for oil immersed HV and EHV power reactors, and
- All documents referenced in the Normative references of both specifications which must be complied with, and
- All accompanying commercial annexures and documents
- Agreed Inspection and Test Plan.
- The *Employer* will ensure maintenance and operations are in accordance with manufacturer's instruction.

The *Contractor* provides all engineering services, material, tools, transport and labour necessary to provide the *works* for installation, testing and commissioning.

The *works* includes the entire power transformer auxiliary equipment normally supplied with a new transformer including but not limited to conservator tank, breathers, HV and LV Bushings, Radiators and Fans, Tap Changer, Protection equipment, Instrumentation, Valves, controls and marshalling kiosks. These are elaborated on in the specification documents.

The *works* operates effectively for at least 40 years. (Expected design life).

2. WORK TO BE PERFORMED BY THE CONTRACTOR FOR THE WORKS

2.1. SCOPE OF WORK

2.1.1. Contractor's Design and Design Review Responsibilities

The *Contractor* performs the design and detailed engineering with drawings of the *works* and affected power transformer auxiliary equipment as detailed in the specification and accompanying signed schedule "A&B" for each unit.

The scope of supply includes but is not limited to the following:

- a) All windings,
- b) Tank and supporting structures
- c) Core
- d) Bushings
- e) Tap changer (on-load)
- f) Radiators, Fans and cooling equipment
- g) Protection equipment related to the transformer, such as PRD,
- h) Buchholz relays, etc.
- i) Temperature Indicators,

- j) Bagged Conservator tank,
- k) Cabling – transformer components to marshalling kiosk only.
- l) Kiosks , panels
- m) On-line Dissolved Gas monitors, where applicable.
- n) Corrosion Protection painting
- o) On-line Drying Systems, where applicable.
- p) Transformer Fast Depressurisation and Fire Prevention equipment, where applicable
- q) Insulating Oil

The *Contractor* shall, after the initial completion of the electrical and mechanical design, perform a design review, with the *Employer* present, before closure of the detail design, and provide outline drawings, design details, and supporting documents, of the works to the *Project Manager* within 6 (six) weeks of order placement, prior to ordering any materials.

The *Contractor* provides the finalized outline drawings of the works to the *Project Manager* before closure of the detail design.

2.1.2. Contractor's Manufacturing and Testing Responsibilities

The *Employer's* participation in the design review and the factory acceptance testing in no way absolves the *Contractor* of any of his contractual obligations.

During Manufacturing, the *Employer*, reserves the right at any time to perform any product or equipment inspections, after giving prior notice to the *Contractor*.

The *Employer*, reserves the right for its representative to attend and witness the Factory Acceptance Testing, and the *Project Manager* must be notified at the latest 12 (twelve) weeks before the intended test date.

2.1.3. Transportation, Delivery, and Off-loading

The *Contractor* notifies the *Project Manager* at least six (6) weeks in advance of the proposed despatch date from factory. Giving the relevant dates of FOB (where applicable) or final delivery date with description of the plant, the packing list, the mass, and any other information deemed necessary for identification.

The *Contractor* is responsible for total transport from the foreign factory up to DAP (Delivered at Place). Transformers must be handed over to the *Employer* on completion with all relevant tests and signed certificates after installation and assembly.

A minimum of 2 impact recorders are fitted to all transformers before being loaded for transport at the factory. One impact recorder will be mounted inside

the transformer tank, on the active part on the middle limb mark and the other recorder on the outside of the transformer tank. Under no circumstances will the *Employer* open the transformer to take any readings from the impact recorder inside the transformer. The transformer will only be opened with agreement of the *Contractor* and when a representative of the *Contractor* is present for the purpose of taking impact recorder readings.

The recorder is only stopped or removed once the transformer is finally positioned at the various locations per individual orders. One continuous record of horizontal, vertical and longitudinal shock and vibration is recorded starting at the commencement of lifting in the factory after completion of the HV test and ending after final placement at the various locations mentioned per individual orders.

Final impact recorder downloads will be done by *Contractor* once the transformer is in its final position and included in the final PQP.

The *Contractor* is to conduct various tests as specified in the specifications 240-6897110 and 240-607256684 and their normative references the applicable tests at the various hold points.

The *Contractor* must place the transformer on its final position on the plinth and is also responsible for supplying Malthoid.

The impact recorders remain the property of the *Contractor*.

Dry-air pressure indication must be provided and must be readable from ground level.

The SFRA and insulation resistance measurement tests must be performed at the following critical points, where applicable

- At factory in a dry state in a transport condition before dispatch. For transformers, they shall be tested in the tap position where all the winding turns are in the circuit.
- At OEM Port before *FOB* for shipping.
- At RSA port of discharge
- At site before installation.
- At final position

These will be further done at any point and time when an incident like bumping or any condition presenting abnormal impact on the tank body and/or active part is experienced.

The test results shall be immediately communicated to the *Employer's* Project Manager. The test report from each point shall be made available to the *Employer's* Project Manager before the unit arrived to the next point of testing. This is required as an early confirmation that the unit did not sustain any damage during the covered transportation segment(s)

These tests are aimed at the early detection of winding movement during the transportation of the transformer as well as to provide a baseline for future condition monitoring of the windings.

All bushings must be transported with shock/impact indicators per the bushing specification 240-56062799.

Any information from checks performed by the *Contractor*, on the impact recorder and the dry-air system, during any transportation phases will be handed to the *Employer* for assessment, prior to the handing over of the unit.

2.1.4. Installation and Commissioning

The *Employer* shall make available the space for storage of components as reasonably close as possible to the bay of installation.

The *Employer* is to ensure that the plinth is level and the *Contractor* shall satisfy himself that the plinth is adequate for the intended transformer installation.

Installation must be comprehensive and include all the auxiliary plant necessary for the proper operation of the transformer, such as, but not limited to, the bushings, tap changer, conservator tank, radiators, pumps, marshalling kiosk, buchholz relays, etc.

The bund walls are removed and re-instated by the *Employer*.

The *Contractor* maintains a safe and clean condition working environment for the duration of the *Contract* whilst at site and is bound by Eskom safety rules at that site

The erection of temporary bund walls for oil storage is to be at the *Contractor's* discretion provided that it complies with the current environmental legislation.

The oil storage in iso-tanks and the oil tests are as per Eskom's test requirements as per A&B Schedule and including Oil specification 240 - 75661431

Employer's Dry air machine specification must be adhered to.

2.1.5. Handing Over

The *Contractor* will hand over the transformer with signed certificates and all ITP's (Manufacturing, Transport, Installation and testing) at place of final installation or storage after completion.

2.2. QUALITY ASSURANCE AND QUALITY CONTROL

2.2.1 Reviews

Design review meeting is to be scheduled in consultation with the Project Manager at the factory after completion of electrical design to ensure that there is a common understanding of the specific requirements and the applicable standards.

The review meeting is structured as detailed in 240-68973110, taking place at the *Contractor's* factory and is scheduled by the *Contractor's Project Manager* at least 12 (twelve) weeks before the design review meeting. This period shall be 6 weeks for design review meetings with factories located within South Africa.

The *Contractor* minutes all-important information during the design review process and ensures that all outstanding actions are addressed and agreed to by all the parties before manufacturing starts.

The *Contractor* ensures that the *Employer's Project Manager* is furnished with a copy of the design review minutes within two (2) weeks from date of the meeting.

In the event of a Scope Change with a cost implication during design review stage, the *Eskom Project Manager* must be notified by the *Contractor's Project Manager* immediately to obtain a mandate to approve within the *reply period* as stated in the contract.

All data/information/drawings provided for design purpose will be treated as confidential and will only be used for the purpose of executing this contract. None of this information will be handed to a third party, including *Employer's* employees who are not directly involved in the design review responsibility and/or process. All parties concerned must sign a non-disclosure and confidentiality form.

2.2.2 Quality

The power transformer is manufactured in accordance with a quality assurance management system complying with the latest ISO 9001 and ISO 14001 standards, which must be accepted by the *Employer*. The *Employer* reserves the right to conduct surveillance and periodic inspections at the *Contractor's* works during the manufacturing phase.

The *Contractor* submits his PQP's to the *Project Manager* for acceptance 6 weeks after the Contract Date, and includes all witness and hold points. Draft copies are submitted and discussed during the design review phase.

The *Contractor* compiles Process Quality Plans (PQPs) to cover the following processes:

- Manufacturing (includes the design stages and all processes during manufacturing up to and including testing). This quality

documentation must be agreed to by not later than the design freeze date.

- Transport (until final position)
- This quality documentation must be agreed to by not later than one (1) month prior to FAT date.
- Assembly and commissioning at site. This quality documentation must be agreed to by not later than FAT date.

The Process Quality Plan (PQP) must include and provide for the following:

- Details of the process and reference to the project
- Acceptance by the *Employer*
- A list of signatures (and reference to the owner) which will be used to complete all the steps for the process. This is necessary for identification of the relevant Authority for signing off certain steps or tasks in the process.
- Hold Points and Witness Points as required by various steps in the processes.
- Reference to certificates or any important documentation e.g. acceptance criteria for inspection points or tests.
- The main process broken down into individual tasks or steps, to a point as to reflect logical building blocks necessary to complete the main process.
- For each step/task there must be place for signature (with date of signature) of a relevant Authority (*Supervisor, Inspector* etc.).

2.2.3 Factory Testing

The scope is detailed in the A&B schedules, the standards 240-68973110 and 240-60725684 plus the acceptance criteria shall be in accordance with the relevant and latest IEC standard as per date of the order.

The *Employer* reserves the right to be present during any or all of tests.

The Contractor shall inform the Employer of the testing date 12 (twelve) weeks in advance.

The *Project Manager* only releases power transformers and shunt reactors for despatch when all tests have been successfully completed.

The *Employer's Project Manager* must give instruction for release within 48 hours from successful test.

2.3 MISCELLANEOUS

2.3.1 Tools

The *Contractor* provides any special tools or keys, if any, that are required for maintenance or affecting adjustments. Excluded are special tools required for long-term tap changer maintenance.

2.3.2 Blanking Plates

The *Contractor* supplies the transformers with all the blanking plates which should be kept as the property of the *Employer*. The blanking

plates must be painted to the same specification as the transformer tank.

2.3.3 Recommended Spares List

The *Contractor* supplies a list of recommended spares for the *works* for the transformer after final design. This list includes item descriptions, reference numbers, quantity recommended, prices, and guaranteed supply period. The *Contractor* also details the recommended routine maintenance required to maintain maximum availability. Where possible, the local supply of plant and material must be indicated.

2.3.4 Summary table of documentation

The *Contractor* supplies the following minimum documentation:

DOCUMENT NAME	COPIES REQUIRED	WHEN TO SUBMIT	REFER TO SECTION
QA Manual	2	Ex-works + 2 weeks	2.2.2
Operating & Maintenance Manual (Training)	2	Before commissioning of the <i>Works</i>	2.4
Operating & Maintenance Manual	5	Ex-works + 2 weeks	240-68973110 and 240-60725684
Soft copy of above	1	Ex-works + 2 weeks	

2.3 TRAINING

The *Contractor* shall provide training to the *Employer*. The training shall be given at different levels

Site staff - It is the responsibility of the *Contractor* to provide training to the *Employer's* personnel in the operation and maintenance of the *works*. The *Contractor* provides a list of recommended training activities including duration and location.

The *Contractor* provides two (2) Master Training Manuals and an electronic media like video is accepted. Each person trained receives his/her own individual copy of the training manual, which allows him/her to make notes in the manual during the training sessions. The Project Manager will provide the number of *Employer's* personnel to be trained up to a maximum of 15 people and duration up to two days.

Training is given to the following site staff

- Store people for units being delivered and erected for storage
- Site staff responsible for maintenance for units being installed and commissioned at the *Employer's* premises.

Training must be completed before the handover of the works. The Contractor shall submit proof of training conducted as part of the handing over documents. The contractor must issue a certificate to each individual who was trained with a summary of the competencies covered.

Engineering staff: The training for engineers shall be arranged on ad-hoc basis and this shall be in line with the design, manufacturing, testing, and life management of transformers. The *Contractor* shall bring proposal to the *Employer* for acceptance. During each contract review, the OEM shall produce the records of the training done.

2.4 Warranty

The manufacturer must warrant the transformer free of defects provided the installation is carried out by the *Contractor*, or under the supervision of an *personnel approved by the factory*. The *Warranty for design defects* must be applicable under any circumstances.

The same applies to transformers going into storage, with a further pre-requisition, that the preparation for storage, or moving to required destination after storage, is supervised by manufacturer's supervisor.

In the case where the site is not ready for installation and commissioning, the *Employer* will be responsible for the unit until the site is ready. The *Employer* has to adhere to the storage procedure of the *Contractor*. In all other circumstances provided the *Employer* had handed the unit back to the *Contractor*, the *Contractor* remains responsible for handling and storage of items.

The equipment is handled and maintained in compliance with the manufacturer's instructions and the equipment is not exposed to the conditions other than those defined by provisions of the Contract.

Normal wear and tear, inadequate maintenance, conditions of Force Majeure and any other damage that cannot be considered as *Contractor's* fault are not covered by warranty.

2.5 SCHEDULES A & B

2.5.1 Schedule A: Specific requirements by the *Employer*.

2.5.2 Schedule B: Guarantees and technical particulars of equipment offered by the *Contractor*.

The *Contractor* guarantees the values entered in Schedule B

Schedules A & B take precedence over all other specifications.

3. ACCOUNTABILITY FOR THE WORKS INSTALLATION

3.1 INSTALLATION WORK

The *Employer* performs the following specific tasks.

- a. *Employer* will be responsible for the connection of the LV cables (not LV bushing terminals) to the rest of the plant, such as those to the Protection Scheme. This is true also for the connection of the droppers on the HV and MV terminals
- b. *Employer* to provide complete transformer plinth access 45 days prior to the final completion date.
- c. The *Contractor* provides scaffolding where applicable or required
- d. The *Contractor* provides cranes where applicable or required.
- e. The *Employer* supplies and installs the earthing for the transformer
- f. The *Contractor* supplies everything else for completing the *works*.

4 PROGRAMME

The *Contractor* submits a programme (up to Completion of the *Works*) to the *Project Manager* for acceptance within four weeks of the Purchase Order Date.

The programme contains all activities, durations, resource details, start date and completion date and relevant milestone dates.

The programme is submitted utilising MS Projects and in pdf format.

5 COMPLETION

5.1 SECTIONAL COMPLETION

The following phases of work are to be completed for sectional completion of the transformer

5.1.1 Design freeze

- Design review has been completed
- Minutes of the design review meeting submitted to the *Project Manager* with all action items signed off and agreed to by all parties.
- The design in totality is according to the *Employer's* specification requirements, including mechanical design review.
- Single line, general arrangement and outline and schematic drawings are available and approved
- Manufacturing PQP's are in place and signed off for acceptance

5.1.2 DAP

Handover to *Employer* with signed documentation if applicable

5.1.3 Installation

- Signed clearance and test certificates
- One set of red lined (as-built) drawings available
- Completed PQP's

- Training manuals available
- Personnel fully trained as per item 2.4 above
- Operating and maintenance manuals delivered
- No operational defects after installation according to the *Works Information* and the hand over check sheet has been filled and signed off by the HV Engineering Specialist
- Oil samples taken before and after installation of the *works* and the same have been approved by HV Engineering

5.1.3 Unit completion

- No outstanding defects.
- Unit on load or in storage for 2 weeks continuously with no visible abnormalities surfacing.
- All documentation as required in Section 2.3.4 delivered.
- All Quality Control documentation signed off, with no outstanding issues to address.

5.2 WORK PROVIDED BY THE CONTRACTOR BY THE COMPLETION DATE

The following *works* are provided by the *Contractor* in accordance with the *Works Information*:

- a. Design
- b. Supply whole of the *works*
- c. Shipping, Transport and Offloading on to final position
- d. Erection, Installation, Testing, Commissioning and Handover at site
- e. Removal of all debris, tools and equipment used during erection of the *works*
- f. Corrosion protection on whole of the *works* at site before handover
- g. Provision and Handover of Operating and Maintenance Manuals
- f. *Employer* Staff Training on site and Training Manuals
- g. "As Built" Drawings for whole of the *works*
- h. All the Quality Documentation signed off with no outstanding actions to be resolved

6. QUALITY MANAGEMENT

The *Contractor* demonstrates compliance to the applicable Quality documents as referenced in the specifications.

The *Contractor* authorises all documents submitted as demonstration of compliance to the quality requirements of the contract.

Before Plant is placed in service the *Contractor* is to certify that it is in safe condition.

7. LABOUR

All staff whether permanent, non-permanent, part-time, sub-contracted, and labour only supply, is the *Contractor's* responsibility in terms of supervision and control.

The *Contractor's* supervisor shall be on site at all times seeing to it that all the workers under his supervision work properly and safely.

8 RESTRICTIONS APPLICABLE TO THE CONTRACTOR

8.1 DETAILS OF OTHER CONTRACTORS

The *Contractor* could be interfacing and co-operating with the following Contractors

- The *Employer's* Protection, Telecommunications, Metering and Control departments (PTM&C)
- The *Employer's* maintenance departments
- Any other

9 ENTITLEMENT TO SITE MATERIALS

All Plant and Material that are removed remains the property of the *Employer*. It is important to note that the *Contractor* stores the removed Plant and Material at a dedicated area. This area is approximately 100m away from the working area.

10 ACCOUNTS AND RECORDS

10.1 THE FOLLOWING INFORMATION MUST BE AVAILABLE ON THE INVOICE:

- The registered name of the company
 - The VAT registration number
 - The *Employer's Contract / Order* number
 - The invoice sequence number
 - Supporting documentation
 - The *Employer's* VAT registration number
- Contractor statement reflecting all payments and status

11 DRAWINGS

Applicable drawings for this contract are described in the specifications. Additional drawings required to supply the *works* can be requested by the *Contractor*.

All new drawings become the property of the *Employer* for maintenance and service purposes.

All drawings provided by the Contractor must adhere to 240-68973110 and 240-60725684.

12 SPECIFICATIONS AND SPECIAL REQUIREMENTS

12.1 Specifications and Standards

The main specifications in the *Works* are 20-68973110 for power transformers and 240-60725684 for shunt reactors. All the documents and standards referenced in the two documents, together with the all the accompanying Commercial Annexures are valid and part of the two documents. The revisions as at the date of contract placement is applicable. The *Contractor* is responsible for obtaining the latest revisions of these documents.

12.2 Special requirements

12.2.1 Transportation requirements and limitations

The transport limitations are to be reflected in the drawings and additional information provided in Annexure B.

12.2.2 Notification Time

The *Contractor* will inform the *Employer* twelve (12) weeks prior to Factory Acceptance, HV test and factory visits including those for design review meetings. This period is 6 weeks for the factories within the borders of South Africa.

12.2.3 Factory Performance Figures

The *Contractor* must provide the *Employer* with the factory performance figures every 6 months. The annual performance figures must have been audited by an independent body. The *Contractor* must inform the *Employer* of any deviations from the quoted Factory failure rates or on time delivery rate.

12.2.4 Internal Inspections

The *Contractor* must inform the *Employer* 7 (seven) days prior to any site tests and/or inspections. The internal inspections indicated in the ITPs are compulsory.

13 ANNEXURES:

Annexure A

Specification documents and the Schedules A&B

Annexure B

Additional information for transportation requirement and limitations

Annexure C

Documentation, Configuration Management, and Drawings

Document and content signed and accepted by:

	Name:	Designation:	Signature:	Date:
Supplier				
Eskom:				

