


TENDER DOCUMENT GOODS AND SERVICES		 <div>CITY OF CAPE TOWN ISIXEKO SASEKAPA STAD KAAPSTAD</div>	
SUPPLY CHAIN MANAGEMENT			
SCM - 542	Approved by Branch Manager: 03/04/2020	Version: 8	Page 58 of 139

TENDER NO: 41S/2021/22

TENDER DESCRIPTION: SAMPLING, TESTING AND ANALYSIS OF MINERAL INSULATING OIL FOR HIGH VOLTAGE ELECTRICAL EQUIPMENT.

CONTRACT PERIOD: FROM DATE OF COMMENCEMENT OF CONTRACT, NOT EXCEEDING A PERIOD OF 36 MONTHS.

VOLUME 3: DRAFT CONTRACT

TENDERER	
NAME of Company/Close Corporation or Partnership / Joint Venture/ Consortium or Sole Proprietor /Individual	
TRADING AS (if different from above)	

NATURE OF TENDER OFFER (please indicate below)	
Main Offer (see clause 2.2.11.1)	
Alternative Offer (see clause 2.2.11.1)	

VOLUME 3: DRAFT CONTRACT

(7) SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract, referring to the National Treasury – Conditions of Contract (revised July 2010), are applicable to this Contract:

1. Definitions

Delete Clause 1.15 and substitute with the following

- 1.15 The word 'Goods' is to be replaced everywhere it occurs in the GCC with the phrase 'Goods and / or Services' which means all of the equipment, machinery, materials, services, products, consumables, etc. that the supplier is required to deliver to the purchaser under the contract. This definition shall also be applicable, as the context requires, anywhere where the words "supplies" and "services" occurs in the GCC.

Delete Clause 1.19 and substitute with the following

- 1.19 The word 'Order' is to be replaced everywhere it occurs in the GCC with the words 'Purchase Order' which means the official purchase order authorised and released on the purchaser's SAP System

Delete Clause 1.21 and substitute with the following:

- 1.21 'Purchaser' means the **City of Cape Town**. The address of the Purchaser is **12 Hertzog Boulevard, Cape Town, 8001**.

Add the following after Clause 1.25:

- 1.26 'Supplier' means any provider of goods and / or services with whom the contract is concluded
- 1.27 "Intellectual Property" means any and all intellectual property rights of any nature anywhere in the world whether registered, registerable or otherwise, including patents, trademarks, registered designs and domain names, applications for any of the foregoing, trade or business names, copyright and rights in the nature of copyright, design rights, rights in databases, know-how, trade secrets and any other intellectual property rights which subsist in computer software, computer programs, websites, documents, information, techniques, business methods, drawings, logos, instruction manuals, lists and procedures and particulars of customers, marketing methods and procedures and advertising literature, including the "look and feel" of any websites

3. General Obligations

Delete Clause 3.2 in its entirety and replace with the following clauses.

- 3.2 The parties will be liable to each other arising out of or in connection with any breach of the obligations detailed or implied in this contract, subject to clause 28.
- 3.3 All parties in a joint venture or consortium shall be jointly and severally liable to the purchaser in terms of this contract and shall carry individually the minimum levels of insurance stated in the contract, if any.
- 3.4 The parties shall comply with all laws, regulations and bylaws of local or other authorities having jurisdiction regarding the delivery of the goods and give all notices and pay all charges required by such authorities.
- 3.4.1 The parties agree that this contract shall also be subject to the CCT's Supply Chain Management Policy ('SCM Policy') that was applicable on the date the bid was advertised, **save that if the Employer adopts a new SCM Policy which contemplates that any clause therein would apply to the contract emanating from this tender, such clause shall also be applicable to that contract**. Please refer to this document contained on the CCT's website.

- 3.4.2 Abuse of the supply chain management system is not permitted and may result in cancellation of the contract, restriction of the supplier, and/or the exercise by the City of any other remedies available to it as described in the SCM Policy.
- 3.5 The **supplier** shall:
- 3.5.1 Arrange for the documents listed below to be provided to the Purchaser prior to the issuing of the order:
- a) Proof of Insurance (Refer to Clause 11) or Insurance Broker's Warrantee
 - b) Letter of good standing from the Compensation Commissioner, or a licensed compensation insurer (Refer to Clause 11)
 - c) Initial delivery programme
 - d) Other requirements as detailed in the tender documents
- 3.5.2 Only when notified of the acceptance of the bid by the issuing of the order, the supplier shall commence with and carry out the delivery of the goods in accordance with the contract, to the satisfaction, of the purchaser
- 3.5.3 Provide all of the necessary materials, labour, plant and equipment required for the delivery of the goods including any temporary services that may be required
- 3.5.4 Insure his workmen and employees against death or injury arising out of the delivery of the goods
- 3.5.5 Be continuously represented during the delivery of the goods by a competent representative duly authorised to execute instructions;
- 3.5.6 In the event of a loss resulting in a claim against the insurance policies stated in clause 11, pay the first amount (excess) as required by the insurance policy
- 3.5.7 Comply with all written instructions from the purchaser subject to clause 18
- 3.5.8 Complete and deliver the goods within the period stated in clause 10, or any extensions thereof in terms of clause 21
- 3.5.9 Make good at his own expense all incomplete and defective goods during the warranty period
- 3.5.10 Pay to the purchaser any penalty for delay as due on demand by the purchaser. The supplier hereby consents to such amounts being deducted from any payment to the supplier.
- 3.5.11 Comply with the provisions of the OHAS Act & all relevant regulations.
- 3.5.12 Comply with all laws relating to wages and conditions generally governing the employment of labour in the Cape Town area and any applicable Bargaining Council agreements.
- 3.5.13 Deliver the goods in accordance with the contract and with all reasonable care, diligence and skill in accordance with generally accepted professional techniques and standards.
- 3.6 The **purchaser** shall:
- 3.6.1 Issue orders for the goods required under this Contract. No liability for payment will ensue for any work done if an official purchase order has not been issued to the supplier.
- 3.6.2 Make payment to the **supplier** for the goods as set out herein.
- 3.6.3 Take possession of the goods upon delivery by the supplier.
- 3.6.4 Regularly inspect the goods to establish that it is being delivered in compliance with the contract.
- 3.6.5 Give any instructions and/or explanations and/or variations to the supplier including any relevant advice to assist the supplier to understand the contract documents.
- 3.6.6 Grant or refuse any extension of time requested by the supplier to the period stated in clause 10.

- 3.6.7 Inspect the goods to determine if, in the opinion of the purchaser, it has been delivered in compliance with the contract, alternatively in such a state that it can be properly used for the purpose for which it was intended.
- 3.6.8 Brief the supplier and issue all documents, information, etc. in accordance with the contract.

5. Use of contract documents and information; inspection, copyright, confidentiality, etc.

Add the following after clause 5.4:

- 5.5 Copyright of all documents prepared by the supplier in accordance with the relevant provisions of the copyright Act (Act 98 of 1978) relating to contract shall be vested in the purchaser. Where copyright is vested in the supplier, the purchaser shall be entitled to use the documents or copy them only for the purposes for which they are intended in regard to the contract and need not obtain the supplier's permission to copy for such use. Where copyright is vested in the purchaser, the supplier shall not be liable in any way for the use of any of the information other than as originally intended for the contract and the purchaser hereby indemnifies the supplier against any claim which may be made against him by any party arising from the use of such documentation for other purposes.

The ownership of data and factual information collected by the supplier and paid for by the purchaser shall, after payment, vest with the purchaser

- 5.6 **Publicity and publication**
The supplier shall not release public or media statements or publish material related to the services or contract within two (2) years of completion of the services without the written approval of the purchaser, which approval shall not be unreasonably withheld.
- 5.7 **Confidentiality**
Both parties shall keep all information obtained by them in the context of the contract confidential and shall not divulge it without the written approval of the other party.
- 5.8 **Intellectual Property**
- 5.8.1 The supplier acknowledges that it shall not acquire any right, title or interest in or to the Intellectual Property of the Employer.
- 5.8.2 The supplier hereby assigns to the Employer, all Intellectual Property created, developed or otherwise brought into existence by it for the purposes of the contract, unless the Parties expressly agree otherwise in writing.
- 5.8.3 The supplier shall, and warrants that it shall:
- 5.8.3.1 not be entitled to use the Employer's Intellectual Property for any purpose other than as contemplated in this contract;
- 5.8.3.2 not modify, add to, change or alter the Employer's Intellectual Property, or any information or data related thereto, nor may the supplier produce any product as a result of, including and/or arising from any such information, data and Intellectual Property, and in the event that it does produce any such product, the product shall be, and be deemed in law to be, owned by the Employer;
- 5.8.3.3 not apply for or obtain registration of any domain name, trademark or design which is similar to any Intellectual Property of the Employer;
- 5.8.3.4 comply with all reasonable directions or instructions given to it by the Employer in relation to the form and manner of use of the Employer Intellectual Property, including without limitation, any brand guidelines which the Employer may provide to the supplier from time to time;
- 5.8.3.5 procure that its employees, directors, members and contractors comply strictly with the provisions of clauses 5.8.3.1 to 5.8.3.3 above;

unless the Employer expressly agrees thereto in writing after obtaining due internal authority.

- 5.8.4 The supplier represents and warrants to the Employer that, in providing goods, services or both, as the case may be, for the duration of the contract, it will not infringe or make unauthorised use of the Intellectual Property rights of any third party and hereby indemnifies the Employer from any claims, liability, loss, damages, costs, and expenses arising from the infringement or unauthorised use by the supplier of any third party's Intellectual Property rights.
- 5.8.5 In the event that the contract is cancelled, terminated, ended or is declared void, any and all of the Employer's Intellectual Property, and any and all information and data related thereto, shall be immediately handed over to the Employer by the supplier and no copies thereof shall be retained by the supplier unless the Employer expressly and in writing, after obtaining due internal authority, agrees otherwise.

7. Performance Security

'Not Applicable. Tenderers must disregard **Form of Guarantee / Performance Security** and are not required to complete same.

8. Inspections, tests and analyses

Delete Clause 8.2 and substitute with the following:

- 8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the purchaser or an organisation acting on behalf of the purchaser.

10. Delivery and documents

Delete clauses 10.1 and 10.2 and replace with the following:

- 10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The time for delivery of the goods shall be the date as stated on the order. Orders for the supply and delivery of goods may be raised up until the expiry of a framework agreement bid, provided that the goods can be delivered within 30 days of expiry of the framework contract. All orders, other than for the supply and delivery of goods, must be completed prior to the expiry of the contract period.
- 10.2 The purchaser shall determine, in its sole discretion, whether the goods have been delivered in compliance with the contract, alternatively in such a state that it can be properly used for the purpose for which it was intended. When the purchaser determines that the goods have been satisfactorily delivered, the purchaser must issue an appropriate certification, or written approval, to that effect. Invoicing may only occur, and must be dated, on or after the date of acceptance of the goods.

11. Insurance

Add the following after clause 11.1:

- 11.2 Without limiting the obligations of the supplier in terms of this contract, the supplier shall effect and maintain the following additional insurances:
- a) Public liability insurances, in the name of the supplier, covering the supplier and the purchaser against liability for the death of or injury to any person, or loss of or damage to any property, arising out of or in the course of this Contract, in an amount not less than **R20 million** for any single claim;
 - b) Motor Vehicle Liability Insurance, in respect of all vehicles owned and / or leased by the supplier, comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability Indemnity;
 - c) Registration / insurance in terms of the Compensation for Occupational Injuries and Disease Act, Act 130 of 1993. This can either take the form of a certified copy of a valid Letter of Good

Standing issued by the Compensation Commissioner, or proof of insurance with a licenced compensation insurer, from either the bidder's broker or the insurance company itself (see **Proof of Insurance / Insurance Broker's Warranty** section in document for a pro forma version).

- d) Professional indemnity insurance providing cover in an amount of not less than R5 million in respect of each and every claim during the contract period.

In the event of under insurance or the insurer's repudiation of any claim for whatever reason, the CCT will retain its right of recourse against the supplier.

- 11.3 The supplier shall be obliged to furnish the CCT with proof of such insurance as the CCT may require from time to time for the duration of this Contract. Evidence that the insurances have been effected in terms of this clause, shall be either in the form of an insurance broker's warranty worded precisely as per the pro forma version contained in the **Proof of Insurance / Insurance Broker's Warranty** section of the document or copies of the insurance policies.

15. Warranty

Add to Clause 15.2:

- 15.2 This warranty for this contract shall remain valid for **Zero (0) months** after the service has been delivered.

16. Payment

Delete Clause 16.1 in its entirety and replace with the following:

- 16.1 A monthly payment cycle will be the norm. All invoices which are dated on or before the 20th of a particular month will typically be paid between the 23rd and 26th of the following month. The supplier may submit a fully motivated application regarding more frequent payment to the Employer's Director: Expenditure for consideration. Requests for more frequent payments will be considered at the sole discretion of the Employer and is not a right in terms of this contract.

Delete Clause 16.2 in its entirety and replace with the following:

- 16.2 The supplier shall furnish the purchaser's Accounts Payable Department with an original tax invoice, clearly showing the amount due in respect of each and every claim for payment.

Add the following after clause 16.4

- 16.5 Notwithstanding any amount stated on the order, the supplier shall only be entitled to payment for goods actually delivered in terms of the Project Specification and Drawings, or any variations in accordance with clause 18. Any contingency sum included shall be for the sole use, and at the discretion, of the purchaser.

The CCT is not liable for payment of any invoice that pre-dates the date of delivery of the goods.

- 16.6 The purchaser will only make advanced payments to the supplier in strict compliance with the terms and details as contained on **Proforma Advanced Payment Guarantee** and only once the authenticity of such guarantee has been verified by the City's Treasury Department.

17. Prices

Add the following after clause 17.1

- 17.2 If as a result of an award of a contract beyond the original tender validity period, the contract execution will be completed beyond a period of twelve (12) months from the expiry of the original tender validity period, then the contract may be subject to contract price adjustment for that period beyond such twelve (12) months. An appropriate contract price adjustment formula will be determined by the Director: Supply Chain Management if such was not included in the bid documents.

- 17.3 If as a result of any extension of time granted the contract execution will be completed beyond a period of twelve (12) months from the expiry of the original tender validity period, then contract price adjustment may apply to that period beyond such twelve (12) months. An appropriate contract price adjustment formula will be determined by the Director: Supply Chain Management if such was not included in the bid documents.
- 17.4 The prices for the goods delivered and services performed shall be subject to contract price adjustment and the following conditions will be applicable:

Refer to Schedule 8: Contract Price Adjustment and/or Rate of Exchange Variation

- 17.5 If price adjustment for variations in the cost of plant and materials imported from outside of South Africa is provided for in the contract, such adjustment shall be based on the information contained on the schedule titled "**Price Basis for Imported Resources**" and as below. For the purposes of this clause the Rand value of imported Plant and Materials inserted on the schedule titled "**Price Basis for Imported Resources**" (column (F)) shall be the value in foreign currency (column (A)) converted to South African Rand (column (C)) by using the closing spot selling rate quoted by **CCT's** main banker, NEDBANK, on the Base Date (seven calendar days before tender closing date) rounded to the second decimal place (column(B)), to which shall be added any Customs Surcharge and Customs Duty applicable at that date (columns (D) and (E)).

17.5.1 Adjustment for variations in rates of exchange:

- (a) The value in foreign currency inserted in column (A) shall be subject to clause (h) below when recalculating the Rand value.
- (b) The rate of exchange inserted in column (B) shall be the closing spot selling rate quoted by Council's main banker, NEDBANK, on the Base Date, rounded to the second decimal place, subject to sub-paragraph (c) below.
- (c) If the rate of exchange inserted by the Tenderer differs from the NEDBANK rate referred to above, then the NEDBANK rate shall apply and the Rand value in columns (C) and (F) shall be recalculated accordingly, without altering the price in the Price Schedule for the relevant items.
- (d) If a tender from a supplier or sub-contractor provides for variations in rates of exchange, the Supplier may **only** claim for variations in rates of exchange if he binds the supplier or sub-contractor to the same provision to take out forward cover as described in sub-paragraph (e) below.
- (e) The Supplier (or sub-contractor) shall within five working days from the date of placing a firm order on an overseas supplier, cover or recover forward by way of a contract with a bank which is an authorised foreign exchange dealer, the foreign exchange component of the cost of any imported Plant and Materials inserted by the Tenderer on the scheduled titled "**Price Basis for Imported Resources**".
- (f) When the Supplier (or sub-contractor) so obtains forward cover, the Supplier shall immediately notify the CCT of the rate obtained and furnish the CCT with a copy of the foreign exchange contract note.
- (g) Based on the evidence provided in sub-paragraph (f) above, the value in Rand inserted in column (C) of on the schedule titled "**Price Basis for Imported Resources**" shall be recalculated using the forward cover rate obtained, and any increase or decrease in the Rand value defined in this clause shall be adjusted accordingly, subject to sub-paragraph (h) below.
- (h) The adjustments shall be calculated upon the value in foreign currency in the Supplier's (or sub-contractor's) **forward cover contract**, provided that, should this value exceed the value in foreign currency inserted in column (A) of on the schedule titled "**Price Basis for Imported Resources**", then the value in column (A) shall be used.

17.53.2 Adjustment for variations in customs surcharge and customs duty

- (a) Any increase or decrease in the Rand value between the amounts of Customs Surcharge and Customs Duty inserted in on the schedule titled "**Price Basis for Imported Resources**" and those amounts actually paid to the Customs and Excise Authorities, which are due to changes in the percentage rates applicable or to the foreign exchange rate used by the authorities, shall be adjusted

accordingly.

(b) The Tenderer shall state the Customs Duty Tariff Reference applicable to each item and the Supplier shall advise the CCT's Agent of any changes which occur.

17.5.3 Adjustment for variation in labour and material Costs

If the prices for imported Plant and Materials are not fixed, the Supplier shall in his Tender specify the formula for calculating Contract Price Adjustments normally used in the country of manufacture and the indices and relative proportions of labour and material on which his Tender prices are based. Evidence of the indices applicable shall be provided with each claim. The indices applicable 42 days before contractual dispatch date from the factory will be used for the purposes of Contract Price Adjustment.

Failure to specify a formula in the Tender shall mean that the prices are fixed or shall be deemed to be fixed.

18. Contract Amendments

Delete the heading of clause 18 and replace with the following:

18. Contract Amendments and Variations

Add the following to clause 18.1:

Variations means changes to the goods, extension of the duration or expansion of the value of the contract that the purchaser issues to the supplier as instructions in writing, subject to prior approval by the purchaser's delegated authority. Should the supplier deliver any goods not described in a written instruction from the purchaser, such work will not become due and payable until amended order has been issued by the purchaser.

20. Subcontracts

Add the following after clause 20.1:

- 20.2 The supplier shall be liable for the acts, defaults and negligence of any subcontractor, his agents or employees as fully as if they were the acts, defaults or negligence of the supplier.
- 20.3 Any appointment of a subcontractor shall not amount to a contract between the CCT and the subcontractor, or a responsibility or liability on the part of the CCT to the subcontractor and shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

Delete Clause 21.2 in its entirety and replace with the following:

- 21.2 If at any time during the performance of the contract the supplier or its sub-contractors should encounter conditions beyond their reasonable control which impede the timely delivery of the goods, the supplier shall notify the purchaser in writing, within 7 Days of first having become aware of these conditions, of the facts of the delay, its cause(s) and its probable duration. As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation, and may at his discretion extend the time for delivery.

Where additional time is granted, the purchaser shall also determine whether or not the supplier is entitled to payment for additional costs in respect thereof. The principle to be applied in this regard is that where the purchaser or any of its agents are responsible for the delay, reasonable costs shall be paid. In respect of delays that were beyond the reasonable control of both the supplier and the purchaser, additional time only (no costs) will be granted.

The purchaser shall notify the supplier in writing of his decision(s) in the above regard.

- 21.3 No provision in a contract shall be deemed to prohibit the obtaining of goods from a national

department, provincial department, or a local authority.

22. Penalties

Delete clause 22.1 and replace with the following:

- 22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum as stated herein for each day of the delay until actual delivery or performance.

The penalty for this contract shall be 1% per day late delivery to the CCT, Up to a max of 10% per order.
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- 22.2 The purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, financial penalties as contained on the **Preference Schedule** relating to breaches of the conditions upon which preference points were awarded.

23. Termination for default

Delete the heading of clause 23 and replace with the following:

23. Termination

Add the following to the end of clause 23.1:

if the supplier fails to remedy the breach in terms of such notice

Add the following after clause 23.7:

- 23.8 In addition to the grounds for termination due to default by the supplier, the contract may also be terminated:
- 23.8.1 Upon the death of the supplier who was a Sole Proprietor, or a sole member of a Close Corporation, in which case the contract will terminate forthwith.
- 23.8.2 The parties by mutual agreement terminate the contract.
- 23.8.3 If an Order has been issued incorrectly, or to the incorrect recipient, the resulting contract may be terminated by the purchaser by written notice
- 23.8.4 If a material irregularity vitiates the procurement process leading to the conclusion of the contract, rendering the procurement process and the conclusion of the resulting contract unfair, inequitable, non-transparent, uncompetitive or not cost-effective, provided the City Manager follows the processes as described in the purchasers SCM Policy.
- 23.8.5 After providing notice to the supplier, if the implementation of the contract may result in reputational risk or harm to the City as a result of (inter alia):
- 23.8.5.1 reports of poor governance and/or unethical behaviour;
 - 23.8.5.2 association with known family of notorious individuals;
 - 23.8.5.3 poor performance issues, known to the Employer;
 - 23.8.5.4 negative social media reports; or
 - 23.8.5.5 adverse assurance (e.g. due diligence) report outcomes..
- 23.9 If the contract is terminated in terms of clause 23.8, all obligations that were due and enforceable prior to the date of the termination must be performed by the relevant party.

26. Termination for insolvency

Delete clause 26.1 and replace with the following:

- 26.1 The purchaser may make either of the following elections to ensure its rights are protected and any

negative impact on service delivery is mitigated:

- 26.1.1 accept a supplier proposal (via the liquidator) to render delivery utilising the appropriate contractual mechanisms; or
- 26.1.2 terminate the contract, as the liquidator proposed supplier is deemed unacceptable to the purchaser, at any time by giving written notice to the supplier (via the liquidator).
- 26.2 Termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

Amend clause 27.1 as follows:

- 27.1 If any dispute or difference of any kind whatsoever, with the exception of termination in terms of clause 23.1(c), arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve such dispute or difference amicably, by mutual consultation.

Delete Clause 27.2 in its entirety and replace with the following:

- 27.2 Should the parties fail to resolve any dispute by way of mutual consultation, either party shall be entitled to refer the matter for mediation before an independent and impartial person appointed by the City Manager in accordance with Regulation 50(1) of the Local Government: Municipal Finance Management Act, 56 of 2003 – Municipal Supply Chain Management Regulations (Notice 868 of 2005). Such referral shall be done by either party giving written notice to the other of its intention to commence with mediation. No mediation may be commenced unless such notice is given to the other party.

Irrespective whether the mediation resolves the dispute, the parties shall bear their own costs concerning the mediation and share the costs of the mediator and related costs equally.

The mediator shall agree the procedures, representation and dates for the mediation process with the parties. The mediator may meet the parties together or individually to enable a settlement.

Where the parties reach settlement of the dispute or any part thereof, the mediator shall record such agreement and on signing thereof by the parties the agreement shall be final and binding.

Save for reference to any portion of any settlement or decision which has been agreed to be final and binding on the parties, no reference shall be made by or on behalf of either party in any subsequent court proceedings, to any outcome of an amicable settlement by mutual consultation, or the fact that any particular evidence was given, or to any submission, statement or admission made in the course of amicable settlement by mutual consultation or mediation.

28. Limitation of Liability

Delete clause 28.1 (b) and replace with the following:

- (b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the sums insured in terms of clause 11 in respect of insurable events, or where no such amounts are stated, to an amount equal to twice the contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

Add the following after clause 28.1:

- 28.2 Without detracting from, and in addition to, any of the other indemnities in this contract, the supplier shall be solely liable for and hereby indemnifies and holds harmless the purchaser against all claims, charges, damages, costs, actions, liability, demands and/or proceedings and expense in

connection with:

- a) personal injury or loss of life to any individual;
- b) loss of or damage to property;

arising from, out of, or in connection with the performance by the supplier in terms of this Contract, save to the extent caused by the gross negligence or wilful misconduct of the purchaser.

- 28.3 The supplier and/or its employees, agents, concessionaires, suppliers, sub-contractors or customers shall not have any claim of any nature against the purchaser for any loss, damage, injury or death which any of them may directly or indirectly suffer, whether or not such loss, damages, injury or death is caused through negligence of the purchaser or its agents or employees.
- 28.4 Notwithstanding anything to the contrary contained in this Contract, under no circumstances whatsoever, including as a result of its negligent (including grossly negligent) acts or omissions or those of its servants, agents or contractors or other persons for whom in law it may be liable, shall any party or its servants (in whose favour this constitutes a *stipulatio alteri*) be liable for any indirect, extrinsic, special, penal, punitive, exemplary or consequential loss or damage of any kind whatsoever, whether or not the loss was actually foreseen or reasonably foreseeable), sustained by the other party, its directors and/or servants, including but not limited to any loss of profits, loss of operation time, corruption or loss of information and/or loss of contracts.
- 28.5 Each party agrees to waive all claims against the other insofar as the aggregate of compensation which might otherwise be payable exceeds the aforesaid maximum amounts payable.

31. Notices

Delete clauses 31.1 and 31.2 and replace with the following:

- 31.1 Any notice, request, consent, approvals or other communications made between the Parties pursuant to the Contract shall be in writing and forwarded to the addresses specified in the contract and may be given as set out hereunder and shall be deemed to have been received when:
- a) hand delivered – on the working day of delivery
 - b) sent by registered mail – five (5) working days after mailing
 - c) sent by email or telefax – one (1) working day after transmission

32. Taxes and Duties

Delete the final sentence of 32.3 and replace with the following:

In this regard, it is the responsibility of the supplier to submit documentary evidence in the form of a valid Tax Clearance Certificate issued by SARS to the CCT at the Supplier Management Unit located within the Supplier Management / Registration Office, 2nd Floor (Concourse Level), Civic Centre, 12 Hertzog Boulevard, Cape Town (Tel 021 400 9242/3/4/5).

Add the following after clause 32.3:

- 32.4 The **VAT registration** number of the City of Cape Town is **4500193497**.

ADDITIONAL CONDITIONS OF CONTRACT

Add the following Clause after Clause 34:

35. Reporting Obligations.

- 35.1 The supplier shall complete, sign and submit with each delivery note, all the documents as required in the Specifications. Any failure in this regard may result in a delay in the processing of any payments.

(8) GENERAL CONDITIONS OF CONTRACT

(National Treasury - General Conditions of Contract (revised July 2010))

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1. Definitions

1. The following terms shall be interpreted as indicated:

- 1.1 'Closing time' means the date and hour specified in the bidding documents for the receipt of bids.
- 1.2 'Contract' means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.3 'Contract price' means the price payable to the supplier under the contract for the full and proper performance of his or her contractual obligations.
- 1.4 'Corrupt practice' means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
- 1.5 'Countervailing duties' are imposed in cases in which an enterprise abroad is subsidised by its government and encouraged to market its products internationally.

- 1.6 'Country of origin' means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognised new product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 1.7 'Day' means calendar day.
- 1.8 'Delivery' means delivery in compliance with the conditions of the contract or order.
- 1.9 'Delivery ex stock' means immediate delivery directly from stock actually on hand.
- 1.10 'Delivery into consignee's store or to his site' means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.
- 1.11 'Dumping' occurs when a private enterprise abroad markets its goods on its own initiative in the RSA at lower prices than that of the country of origin, and which action has the potential to harm the local industries in the RSA.
- 1.12 'Force majeure' means an event beyond the control of the supplier, not involving the supplier's fault or negligence, and not foreseeable. Such events may include, but are not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- 1.13 'Fraudulent practice' means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the bidder of the benefits of free and open competition.
- 1.14 'GCC' means the General Conditions of Contract.
- 1.15 'Goods' means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.
- 1.16 'Imported content' means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.
- 1.17 'Local content' means that portion of the bidding price which is not included in the imported content, provided that local manufacture does take place.
- 1.18 'Manufacture' means the production of products in a factory using labour, materials, components and machinery, and includes other, related value-adding activities.
- 1.19 'Order' means an official written order issued for the supply of goods or works or the rendering of a service.
- 1.20 'Project site', where applicable, means the place indicated in bidding documents.
- 1.21 'Purchaser' means the organisation purchasing the goods.
- 1.22 'Republic' means the Republic of South Africa.
- 1.23 'SCC' means the Special Conditions of Contract.

1.24 'Services' means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance, and other such obligations of the supplier covered under the contract.

1.25 'Written' or 'in writing' means handwritten in ink or any form of electronic or mechanical writing.

2. Application

2.1 These general conditions are applicable to all bids, contracts and orders, including bids for functional and professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable, a non-refundable fee for documents may be charged.

3.2 With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za.

4. Standards

4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

5. Use of contract documents and information; inspection.

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for the purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1, except for purposes of performing the contract.

5.3 Any document, other than the contract itself, mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent rights

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from the use of the goods or any part thereof by the purchaser.

7. Performance Security

- 7.1 Within 30 (thirty) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in the SCC.
- 7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.
- 7.2 The performance security shall be denominated in the currency of the contract or in a freely convertible currency acceptable to the purchaser, and shall be in one of the following forms:
 - a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or
 - b) a cashier's or certified cheque.
- 7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than 30 (thirty) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in the SCC.

8. Inspections, tests and analyses

- 8.1 All pre-bidding testing will be for the account of the bidder.
- 8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organisation acting on behalf of the Department.
- 8.3 If there are no inspection requirements indicated in the bidding documents and no mention of such is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.
- 8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.
- 8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.
- 8.6 Supplies and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.
- 8.7 Any contract supplies may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the supplier, who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract. Failing such removal, the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.
- 8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of the GCC.

9. Packing

- 9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.
- 9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, specified in the SCC, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

- 10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in the SCC.
- 10.2 Documents to be submitted by the supplier are specified in the SCC.

11. Insurance

- 11.1 The goods supplied under the contract shall be fully insured, in a freely convertible currency, against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC.

12. Transportation

- 12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.

13. Incidental Services

- 13.1 The supplier may be required to provide any or all of the following services, including additional services (if any) specified in the SCC:
- (a) performance or supervision of on-site assembly, and/or commissioning of the supplied goods;
 - (b) furnishing of tools required for the assembly and/or maintenance of the supplied goods;
 - (c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
 - (d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and
 - (e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.
- 13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts

- 14.1 As specified in the SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:
- (a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and
 - (b) in the event of termination of production of the spare parts:
 - (i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and
 - (ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

- 15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications), or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.
- 15.2 This warranty shall remain valid for 12 (twelve) months after the goods, or any portion thereof, as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for 18 (eighteen) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in the SCC.
- 15.3 The purchaser shall notify the supplier promptly, in writing, of any claims arising under this warranty.
- 15.4 Upon receipt of such notice, the supplier shall, within the period specified in the SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.
- 15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified in the SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

16. Payment

- 16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified in the SCC.
- 16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfilment of any other obligations stipulated in the contract.
- 16.3 Payments shall be made promptly by the purchaser, but in no case later than 30 (thirty) days after submission of an invoice or claim by the supplier.
- 16.4 Payment will be made in Rand unless otherwise stipulated in the SCC.

17. Prices

- 17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices tendered by the supplier in his bid, with the exception of any price adjustments authorized in the SCC or in the purchaser's request for bid validity extension, as the case may be.

18. Contract Amendments

- 18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

19. Assignment

- 19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

- 20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

- 21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.
- 21.2 If at any time during the performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his or her discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.
- 21.3 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.
- 21.4 The right is reserved to procure, outside of the contract, small quantities of supplies; or to have minor essential services executed if an emergency arises, or the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily available.
- 21.5 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.
- 21.6 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without cancelling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and, without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

- 22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services, using the current prime interest rate, calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination for default

- 23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:
- (a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;
 - (b) if the supplier fails to perform any other obligation(s) under the contract; or
 - (c) if the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.
- 23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than 14 (fourteen) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated 14 (fourteen) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.

23.5 Any restriction imposed on any person by the Accounting Officer/Authority will, at the discretion of the Accounting Officer/Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person is or was, in the opinion of the Accounting Officer/Authority, actively associated.

23.6 If a restriction is imposed, the purchaser must, within 5 (five) working days of such imposition, furnish the National Treasury with the following information:

- (i) the name and address of the supplier and/or person restricted by the purchaser;
- (ii) the date of commencement of the restriction;
- (iii) the period of restriction; and
- (iv) the reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, Act 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period of not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction, and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. Anti-dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidised import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall, on demand, be paid forthwith by the contractor to the State, or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he or she delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him or her.

25. Force majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if, and to the extent that, his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall notify the purchaser promptly, in writing, of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve such dispute or difference amicably, by mutual consultation.

27.2 If, after 30 (thirty) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

27.5 Notwithstanding any reference to mediation and/or court proceedings herein,

- (a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and
- (b) the purchaser shall pay the supplier any monies due to the supplier.

28. Limitation of Liability

28.1 Except in cases of criminal negligence or wilful misconduct, and in the case of infringement pursuant to Clause 6:

- (a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and
- (b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable Law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified in the SCC.

31. Notices

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail, and any other notice to him shall be posted by ordinary mail, to the address furnished in his bid or to the address notified later by him in writing; and such posting shall be deemed to be proper service of such notice.

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and Duties

- 32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, licence fees, and other such levies imposed outside the purchaser's country.
- 32.2 A local supplier shall be entirely responsible for all taxes, duties, licence fees, etc., incurred until delivery of the contracted goods to the purchaser.
- 32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid the Department must be in possession of a tax clearance certificate submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

33. National Industrial Participation (NIP) Programme

- 33.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation.

34 Prohibition of Restrictive practices

- 34.1 In terms of section 4 (1) (b) (iii) of the Competition Act, Act 89 of 1998, as amended, an agreement between or concerted practice by firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder(s) is/are or a contractor(s) was/were involved in collusive bidding (or bid rigging).
- 34.2 If a bidder(s) or contractor(s), based on reasonable grounds or evidence obtained by the purchaser, has/have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in the Competition Act, Act 89 of 1998.
- 34.3 If a bidder(s) or contractor(s) has/have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and/or terminate the contract in whole or part, and/or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding 10 (ten) years and/or claim damages from the bidder(s) or contractor(s) concerned.

(9) FORM OF GUARANTEE / PERFORMANCE SECURITY**NOT APPLICABLE****FORM OF GUARANTEE / PERFORMANCE SECURITY****GUARANTOR DETAILS AND DEFINITIONS**

"Guarantor" means:

Physical address of Guarantor:

"Supplier" means:

"Contract Sum" means: The accepted tender amount (INCLUSIVE OF VAT) of R

Amount in words:

"Guaranteed Sum" means: The maximum amount of R.....

Amount in words:

"Contract" means: The agreement made in terms of the Form of Offer and Acceptance for tender no _____: _____ and such amendments or additions to the contract as may be agreed in writing between the parties.

PERFORMANCE GUARANTEE

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
2. The Guarantor's period of liability shall be from and including the date of issue of this Guarantee/Performance Security up to and including the termination of the Contract or the date of payment in full of the Guaranteed Sum, whichever occurs first.
3. The Guarantor hereby acknowledges that:
 - 3.1 any reference in this Guarantee/Performance to "Contract" is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
 - 3.2 its obligation under this Guarantee/Performance Security is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the City of Cape Town the sum due and payable upon receipt of the documents identified in 4.1 to 4.2:
 - 4.1 A copy of a first written demand issued by the City of Cape Town to the Supplier stating that payment of a sum which is due and payable has not been made by the Supplier in terms of the Contract and failing such payment within seven (7) calendar days, the City of Cape Town intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4.2 A first written demand issued by the City of Cape Town to the Guarantor at the Guarantor's physical address with a copy to the Supplier stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum has still not been paid.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the City of Cape Town the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the City of Cape Town to the Guarantor at the Guarantor's physical address calling up this Guarantee / Performance Security, such demand stating that:
 - 5.1 the Contract has been terminated due to the Supplier's default and that this Guarantee/Performance Security is called up in terms of 5; or

5.2 a provisional or final sequestration or liquidation court order has been granted against the Supplier and that the Guarantee/Performance Guarantee is called up in terms of 5; and

5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Where the Guarantor has made payment in terms of 5, the City of Cape Town shall upon the termination date of the Contract, submit an expense account to the Guarantor showing how all monies received in terms of this Guarantee/Performance Security have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Guarantee/Performance Security shall bear interest at the prime overdraft rate of the City of Cape Town's bank compounded monthly and calculated from the date payment was made by the Guarantor to the City of Cape Town until the date of refund.
8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
9. The City of Cape Town shall have the absolute right to arrange its affairs with the Supplier in any manner which the City of Cape Town may deem fit and the Guarantor shall not have the right to claim his release from this Guarantee /Performance Security on account of any conduct alleged to be prejudicial to the Guarantor.
10. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
11. This Guarantee/Performance Security is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee / Performance Security shall be returned to the Guarantor after it has expired.
12. This Guarantee/Performance Security, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
13. Where this Guarantee/Performance Security is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at

Date

Guarantor's signatory (1)

Capacity

Guarantor's signatory (2)

Capacity

Witness signatory (1)

Witness signatory (2)

ANNEXURE**LIST OF APPROVED FINANCIAL INSTITUTIONS**

The following financial institutions are currently (as at 18 October 2016) approved for issue of contract guarantees to the City:

National Banks:

ABSA Bank Ltd.
FirstRand Bank Ltd.
Investec Bank Ltd.
Nedbank Ltd.
Standard Bank of SA Ltd.

International Banks (with branches in SA):

Barclays Bank plc.
Citibank n.a.
Credit Agricole Corporate and Investment Bank
HSBC Bank plc.
JP Morgan Chase Bank
Societe Generale
Standard Chartered Bank

Insurance companies:

ABSA Insurance
Coface s.a.
Compass Insurance Co.
Credit Guarantee Insurance Co.
Guardrisk Insurance Co.
Hollard Insurance Company Ltd.
Infiniti Insurance Limited
Lombard Insurance
New National Assurance Co.
Regent Insurance Co.
Renasa Insurance Company Ltd.
Santam Limited
Zurich Insurance Co.

(10) FORM OF ADVANCE PAYMENT GUARANTEE**NOT APPLICABLE****ADVANCE PAYMENT GUARANTEE****GUARANTOR DETAILS AND DEFINITIONS**

"Guarantor" means:

Physical address of guarantor:

"Supplier" means:

"Contract Sum" means: The accepted tender amount (INCLUSIVE of VAT) of R

Amount in words:

"Contract" means: The agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Plant and materials" means: The Plant and materials in respect of which an advance payment prior to manufacture is required, which the City of Cape Town has agreed may be subject to advance payment, such Plant and materials being listed in the Schedule of Plant and materials.

"Schedule of Plant and materials" means: A list of Plant and materials which shows the value thereof to be included in the Guaranteed Advance Payment Sum.

"Guaranteed Advance Payment Sum" means: The maximum amount of R.....

Amount in words:

1. The Guarantor's liability shall be limited to the amount of the Guaranteed Advance Payment Sum.
2. The Guarantor's period of liability shall be from and including the date of issue of this Advance Payment Guarantee and up to and including the termination of the Contract or the date of payment in full of the Guaranteed Advance Payment Sum, whichever occurs first.
3. The Guarantor hereby acknowledges that:
 - 3.1 any reference in this Advance Payment Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
 - 3.2 its obligation under this Advance Payment Guarantee is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the City of Cape Town the sum advanced to the Supplier upon receipt of the documents identified in 4.1 to 4.2:
 - 4.1 A copy of a first written demand issued by the City of Cape Town to the Supplier stating that payment of a sum advanced by the City of Cape Town has not been repaid by the Supplier in terms of the Contract ("default") and failing such payment within seven (7) calendar days, the City of Cape Town intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4.2 A first written demand issued by the City of Cape Town to the Guarantor at the Guarantor's physical address with a copy to the Supplier stating that a period of seven (7) calendar days has elapsed since the first written demand in terms of 4.1 and the sum advanced has still not been repaid by the Supplier.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the City of Cape Town the Guaranteed Advance Payment Sum or the full outstanding balance not repaid upon receipt of a first written demand from the City of Cape Town to the Guarantor at the Guarantor's physical address calling up this Advance Payment Guarantee, such demand stating that:
 - 5.1 the Contract has been terminated due to the Supplier's default and that this Advance Payment Guarantee is called up in terms of 5; or

- 5.2 a provisional or final sequestration or liquidation court order has been granted against the Supplier and that the Advance Payment Guarantee is called up in terms of 5; and
- 5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
9. The City of Cape Town shall have the absolute right to arrange its affairs with the Supplier in any manner which the City of Cape Town may deem fit and the Guarantor shall not have the right to claim his release from this Advance Payment Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
10. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
11. This Advance Payment Guarantee is neither negotiable nor transferable and shall expire in terms of 2, whereafter no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
12. This Advance Payment Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
13. Where this Guarantee/Performance Security is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at

Date

Guarantor's signatory (1)

Capacity

Guarantor's signatory (2)

Capacity

Witness signatory (1)

Witness signatory (2)

(10.1) ADVANCE PAYMENT SCHEDULE

NOT APPLICABLE

(11) OCCUPATIONAL HEALTH AND SAFETY AGREEMENT

AGREEMENT MADE AND ENTERED INTO BETWEEN THE CITY OF CAPE TOWN (HEREINAFTER CALLED THE “CCT”) AND

(Supplier/Mandatary/Company/CC Name)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993 AS AMENDED.

I, _____
representing _____

....., as an employer

in its own right, do hereby undertake to ensure, as far as is reasonably practicable, that all work will be performed, and all equipment, machinery or plant used in such a manner as to comply with the provisions of the Occupational Health and Safety Act (OHSA) and the Regulations promulgated thereunder.

I furthermore confirm that I am/we are registered with the Compensation Commissioner and that all registration and assessment monies due to the Compensation Commissioner have been fully paid or that I/We are insured with an approved licensed compensation insurer.

COID	ACT	Registration	Number:

OR Compensation Insurer: Policy No.:

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him/them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Council's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any subcontractors employed by me will enter into an occupational health and safety agreement separately, and that such subcontractors comply with the conditions set.

I hereby declare that I have read and understand the Occupational Health and Safety Specifications contained in this tender and undertake to comply therewith at all times.

I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan submitted and approved in terms thereof.

Signed at on the day of 20

Witness

Mandatory

Signed at on the..... day of..... 20

Witness

for and on behalf of
City of Cape Town

(12) INSURANCE BROKER'S WARRANTY (PRO FORMA)

Logo

Letterhead of supplier's Insurance Broker

Date _____

CITY OF CAPE TOWN
City Manager
Civic Centre
12 Hertzog Boulevard
Cape Town
8000

Dear Sir

TENDER NO.: 41S/2021/22

TENDER DESCRIPTION: SAMPLING, TESTING AND ANALYSIS OF MINERAL INSULATING OIL FOR HIGH VOLTAGE ELECTRICAL EQUIPMENT.

NAME OF SUPPLIER: _____

I, the undersigned, do hereby confirm and warrant that all the insurances required in terms of the abovementioned contract have been issued and/or in the case of blanket/umbrella policies, have been endorsed to reflect the interests of the CITY OF CAPE TOWN with regard to the abovementioned contract, and that all the insurances and endorsements, etc., are all in accordance with the requirements of the contract.

I furthermore confirm that all premiums in the above regard have been paid.

Yours faithfully

Signed: _____

For: _____ (Supplier's Insurance Broker)

(13) SPECIFICATION(S)

TENDERERS MUST NOTE THAT WHEREVER THIS DOCUMENT REFERS TO ANY PARTICULAR TRADE MARK, NAME, PATENT, DESIGN, TYPE, SPECIFIC ORIGIN OR PRODUCER, SUCH REFERENCE SHALL BE DEEMED TO BE ACCOMPANIED BY THE WORDS ‘OR EQUIVALENT’

13.1 INTRODUCTION

As part of the City of Cape Town's preventive maintenance and condition assessment strategy, the City requires oil sampling, gas sampling, analysis and condition assessments to be conducted on the High Voltage Electrical Equipment, located within the City of Cape Town metropolitan area.

13.2 SCOPE OF SPECIFICATION

This specification covers the provisions for the oil and gas sampling, analytical testing and evaluation together with condition assessment of used (in-service), new and regenerated uninhibited Naphthenic type U mineral insulating oil as used in it's transformers, reactors, instrument transformes, switchgear and similar HV electrical apparatus for insulation and heat transfer purposes.

13.3 TERMS, DEFINITIONS AND ABBREVIATIONS

For the purposes of this document, the terms, definitions and abbreviations given in NRS 079-1 and IEC 60296 - 2012 and the following shall apply.

13.3.1 Accredited Laboratory

A laboratory with a SANAS accreditation or equivalent recognized accrediting body in South Africa. Such labs may offer bids on Item 4 of the Price Schedule.

13.3.2 Accredited Staff

Persons who are suitably trained and can demonstrate their knowledge against a known procedure or evaluation to certify their knowledge.

13.3.3 Approved Distributor

A distributor who has a distribution agreement with a main oil supplier and who complies in all respects to the requirements of the main oil supplier and any applicable National and Local legislation as it pertains to the handling of dangerous goods and the protection of the environment.

13.3.4 Antioxidant Additive

organic compound added to retard the oxidation process in an insulating oil.

13.3.5 Clean-Up

action of remediation that includes soil excavation, bioremediation, solvent soil wash, land farming or electrochemical treatment.

13.3.6 Containment

prevention of the spreading of oil spill.

13.3.7 Corrosive Sulphur

oil that contains reactive sulphur, and can cause corrosion problems in power equipment.

13.3.8 Dielectric Dissipation Factor (Tan Delta) DDF (Tan Delta)

measurement of the tangent of the phase angle or the tan of the loss angle based on the measurement of the leakage current through the oil, which in turn is a measure of the contamination or deterioration (or both) of oil.

13.3.9 Dielectric Strength

ability of oil to withstand electrical stress; influenced by the presence of moisture and particulate material in the oil.

13.3.10 Electrical Equipment

transformers (including a NEC, NECRT, voltage regulator, current transformer, voltage transformer and reactor, etc.) capacitor, re-closer, switchgear or cable that contains dielectric fluid.

13.3.11 Filtered Oil

purified oil, polished or reconditioned oil that has been filtered to improve the dielectric strength and to decrease the moisture and particulate content.

13.3.12 Flash Point

temperature at which sufficient vapour is given off by the oil to support combustion.

13.3.13 Furanic Compound

compound normally produced by the solid insulation in power equipment due to ageing and fault conditions in the equipment; is a by-product of paper degradation and a residue of the refining process.

13.3.14 Initial Type Acceptance Approval

approval of a batch of tests that is carried out to ensure the product complies with the CCT requirements and is fit for the intended application or intended use

NOTE : These tests are performed before approval of the supplied mineral insulating oil. The tests are carried out by an accredited laboratory at the cost of the tenderer.

13.3.15 Insulating Oil

mineral insulating oil used in transformers and other electrical equipment for insulation and cooling.

13.3.16 Interfacial Tension IFT

measure of the dipole concentration of a liquid.

13.3.17 Moisture Content

moisture dissolved in oil and measured in milligrams per kilogram.

13.3.18 Neutralization Value, Acidity, Total Acid Number

indication or a measure of the acidic constituent or contaminant in the oil.

13.3.19 New Mineral Insulating Oil

virgin mineral insulating oil or mineral insulating oil that has never been used in electrical equipment and that complies in all respects with SANS 555-2: 2017.

13.3.20 On-Site

own site, road or property that belongs to the City of Cape Town of a particular item of electrical equipment.

13.3.21 PCB

any one of a number of 209 congeners that contains one to ten chlorine atoms attached to a biphenyl group; are synthetic products not known to occur naturally.

13.3.22 PCB Contaminated Mineral Insulating Oil

mineral insulating oil, including mineral insulating oil in electrical equipment, that has a measurable PCB concentration or contamination of 51 mg/kg or more but less than 500 mg/kg

13.3.23 PCB Free

PCB level below the detection limit or zero (< 1 according to SANS 290)

13.3.24 Pour Point

point at which oil loses its liquid properties.

13.3.25 Quality Test

Test carried out when product is delivered to the customer or end user.

NOTE Quality tests in this document refer to tests carried out to ensure the product received complies with the correct limits as set out in this specification.

13.3.26 Regenerated Mineral Insulating Oil

reclaimed / recycled mineral insulating oil that has been re-processed and complies in all respects with SANS 555-4: 2017.

13.3.27 Uninhibited

mineral insulating oil that contains no antioxidant additive but may contain other additives.

13.3.28 Viscosity

resistance to flow and/or the ability of a certain volume of oil to flow over a period of time at a given temperature.

13.4 TENDERER REQUIREMENTS

Tenderers shall;

- 13.4.1 Have the plant, equipment and access to a SANAS accredited laboratory in South Africa, and able to sample, test, analyse and assess new, regenerated, used and recycled Naphthenic mineral insulating oil to the required standards.
- 13.4.2 Be responsible for conducting an evaluation of the analysis results against the specified tests as defined in clause 13.9 (Tables A – E).
- 13.4.3 Be responsible for providing results and an evaluation report to the City of Cape Town.
- 13.4.4 Only utilise personnel who are trained and certified in oil sampling techniques. The sampler shall be accredited in accordance with NRS 079-1 to take samples from electrical equipment (Level 1 basic sampler training) and, quality assurance and specialised sampling (Level 2 advanced sampler training). Schedule 15C to be completed.
- 13.4.5 Ensure that all oil sampling results are stored in a historian server or cloudbase application, where historical test results can be easily accessed for electrical equipment condition assessments and analysis. Doble Database or equivalent expert system software systems are to be utilised.
- 13.4.6 Have at least three (3) years of oil sampling and analysis experience and is required to provide detailed referral information of work undertaken in this environment. Schedule 15A to be completed.
- 13.4.7 Be equipped and competent to provide all of the service items detailed in the Pricing Schedule. Before sampling may commence, CCT shall compile and submit a detailed work schedule and oil analysis tests required, as well as relevant purchase orders to the service provider representative.
- 13.4.8 Be responsible for ensuring that they provide their own transport to and from site and be able to transport all necessary sampling and collection equipment and samples.
- 13.4.9 Be responsible for ensuring that at least one member of each oil sampling team is certified as a responsible person as per NRS 040 level 2, NRS 040 certificate to be attached in Schedule 15C for each responsible person.

13.5 LABORATORY REQUIREMENTS

All transformer oil / gas analyses shall only be conducted by an established accredited third party laboratory that is fully equipped with proprietary testing equipment suitable to undertake the analyses as specified.

13.5.1 This laboratory shall be accredited/certified;

13.5.1.1 **ISO 17025** General requirements for the competence of testing and calibration laboratories

13.5.1.2 **SANAS** Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act (Act 19 of 2006)

13.5.1.3 Accreditation/certification certificates shall be submitted in returnable schedule **15B**

13.5.2 The laboratory facility shall be able to accept, process and analyse samples collected tins and/or syringes in a clean and safe environment.

13.5.3 Instrument calibration certificates are to be current and can be called for at any stage by the City.

13.5.4 The facility should be able to perform all the oil analysis and tests listed on the pricing schedule.

13.5.5 The laboratory must be able to accept and process urgent or emergency oil/gas samples.

13.6 OIL AND GAS SAMPLING

13.6.1 The oil and gas samples must be taken in accordance with the attached CCT Power Transformer Oil and Gas Sampling Procedures - see Specification **Annexures A and B - Particular specification PXZ**

13.6.2 The general safety precautions detailed in **NRS 079 - Part 1** need to be complied with at all times.

13.7 SAMPLE ANALYSIS

13.7.1 All samples taken must be processed and analysed within 7 days of taking the sample.

13.7.2 The analyses of the various oil/gas samples shall be done in accordance with the following international standards detailed in the tables below.

13.8 CATEGORIES OF OIL SAMPLING AND ANALYSIS SERVICES

Oil sampling shall be categorised into the following categories;

13.8.1 **Category A:**

Routine/scheduled (e.g. annual) oil sampling and analysis of in-service oil within HV Electrical equipment. Refer **Table A** below.

13.8.1.1 The total turnaround time from receipt of order/request for service to delivery of report is ten (10) working days.

13.8.2 **Category B:**

Emergency (e.g. fault analysis) oil sampling and analysis of in-service oil within HV Electrical equipment. Refer **Table B** below.

13.8.2.1 In addition to the routine, scheduled sampling and analysis, the CCT may require oil samples and analysis to be done in cases of emergency. These emergencies' can occur during normal working hours or after hours.

13.8.2.2 These emergency services will be triggered telephonically. The telephonic request will be confirmed via email and an official order as soon as possible thereafter.

13.8.2.3 Where emergency samples and analysis are requested, the following will apply:

13.8.2.3.1 The Tenderer will take the sample within **four (4) hours** after receiving the request for an emergency sample to be taken.

13.8.2.3.2 The Tenderer will inform the CCT, Manager High Voltage or an appointed field services delegate of the results as soon as the test has been completed, either by email and/or telephonically, and submit a written report within **forty-eight (48) hours**.

13.8.3 **Category C:**

Ad-hoc individual tests for in-service, new or regen oil as and when required. Refer **Table C** below.

13.8.3.1 The total turnaround time from receipt of order/request for service to delivery of report is ten (10) working days.

13.8.4 **Category D:**

Verification/testing and analysis of NEW/REGEN oil (basic quality subset). Refer **Table D** below.

13.8.4.1 The total turnaround time from receipt of order/request for service to delivery of report is ten (10) working days

13.8.5 Category E:

Compatibility verification/testing and analysis of in service oil for suitability for regeneration.
Refer **Table E** below.

13.8.5.1 The total turnaround time from receipt of order/request for service to delivery of report is ten (10) working days.

13.9 TEST DEFINITIONS**13.9.1 Table A - Routine testing and analysis of in-service oil.**

ITEM	ANALYSIS	TEST METHOD / STANDARD
A.1	Dissolved Gas Analysis (DGA)	IEC 60628/ASTM D3612
A.2	Dielectric strength	IEC 60156
A.3	Moisture content	IEC 60814 ASTM D1533
A.4	Dielectric dissipation factor(tan delta)	IEC 61620 and IEC 60247
A.5	Acidity Neutralisation value	IEC 62021-1
A.6	Colour / Appearance	IEC 60422 ASTM D1500
A.7	Sediment and sludge	IEC 60422
A.8	Furanic Analysis	IEC 61198
A.9	Degree of polymerisation (DP) of insulating paper	Eskom/Cigre/IEC 61198
A.10	Polychlorinated Biphenyl (PCB)	IEC 60619 or EPA 600 or ASTM D4059
A.11	Density	ASTM D1298-99 (2005)

13.9.2 Table B – Emergency testing and analysis of in-service oil.

ITEM	ANALYSIS	TEST METHOD / STANDARD
B.1	Dissolved Gas Analysis (DGA)	IEC 60628/ASTM D3612
B.2	Dielectric strength	IEC 60156
B.3	Moisture content	IEC 60814 ASTM D1533
B.4	Acidity Neutralisation value	IEC 62021-1
B.5	Colour / Appearance	ASTM D1500

13.9.3 Table C – Ad-hoc testing and analysis of in-service/new/regen oil.

ITEM	ANALYSIS	TEST METHOD
C.1	Dielectric strength	IEC 60156
C.2	Moisture content	IEC 60814 ASTM D1533

C.3	Kinematic Viscosity	ASTM D445 ISO 3104
C.4	Flash Point	ASTM D93 ISO 2719 (closed cup)
C.5	Acidity Neutralisation value	IEC 62021-1
C.6	Colour / Appearance	IEC 60422 ASTM D1500
C.7	Dielectric dissipation factor (tan delta)	IEC 61620 IEC 60247 BS 5737
C.8	Interfacial tension	ASTM D971
C.9	Particle contamination	ISO 4406 (1999) IEC 60970
C.10	Polychlorinated biphenyl (PCB)	IEC 60619 EPA 600 ASTM D4059
C.11	Dissolved Gas Analysis (DGA)	IEC 60628/ASTM D3612
C.12	Furanic Analysis	IEC 61198
C.13	Degree of polymerisation (DP) of insulating paper	Eskom/Cigre
C.14	Sediment and sludge	IEC 60422
C.15	Silicon/silicone	ASTM D6595
C.16	Oxidation stability	ASTM D2440/IEC 61125 Method C/ASTM D2112 (RBOT)
C.17	Gassing tendency	IEC 60628 Method A/ASTM D2300
C.18	Density	ASTM D1298-99 (2005)

13.9.4 Table D - Routine testing and analysis of new/regen oil (basic quality subset).

ITEM	ANALYSIS	TEST METHOD	NEW MINERAL INSULATING OIL SPECIFICATION	REGEN MINERAL INSULATING OIL SPECIFICATION
D.1	Dielectric strength	IEC 60156	≥ 50 kV / 2.5mm On delivery	≥ 50 kV / 2.5mm
D.2	Moisture content	IEC 60814 ASTM D1533	≤ 30 mg/kg On delivery	≤ 30 mg/kg On delivery
D.3	Kinematic Viscosity	ASTM D445 ISO 3104	≤ 12 mm ² /s	≤ 12 mm ² /s
D.4	Flash Point	ASTM D93 ISO 2719 (closed cup)	≥ 135 °C min	≥ 135 °C min
D.5	Acidity Neutralisation value	IEC 62021-1	≤ 0.01 mg KOH/g	≤ 0.01 mg KOH/g
D.6	Appearance	IEC 60422	Clear, free of sediment and suspended matter	Clear, free of sediment and suspended matter
D.7	Dielectric dissipation factor (tan delta)	IEC 61620 IEC 60247 BS 5737	≤ 0.005 max	≤ 0.005 max
D.8	Interfacial tension	ASTM D971	≥ 40 min	≥ 35 min

D.9	Particle contamination	ISO 4406 (1999) IEC 60970	ISO 17/15/12 or better	ISO 17/15/12 or better
D.10	Polychlorinated biphenyl (PCB)	IEC 60619 EPA 600 ASTM D4059	Not detectable	Not detectable
D.11	Corrosive sulphur	IEC 62535	Non corrosive	Non corrosive
D.12	Inhibitor content Antioxidant additives	IEC 60666	No additives	No additives
D.13	Density	ASTM D1298- 99 (2005)	≤ 0, 910 max.	≤ 0,895 max.

13.9.5 Table E - Routine testing and analysis of in-service oil for regen suitability

ITEM	TEST DESCRIPTION	UNIT	SPECIFICATION	TEST METHOD
E.1	Polychlorinated biphenyls	mg/kg	≤ 20	EPA 600
E.2	Silicon contamination	mg/kg	< 3	ASTM D6595
E.3	Acidity	mg KOH/g	0,3	IEC 62021-1
E.4	Polyaromatic hydrocarbon	%	≤ 3,0 max.	BS 2000-346
E.5	Inhibitor content	% by mass	Dependant on type. No additives. Type U or trace amounts of inhibitor type I	IEC 60666
E.6	Corrosive sulphur		Non-corrosive	IEC 62535

13.10 REPORTING

The Tenderer shall be responsible for supplying a test report for each sample analysed. These test reports shall detail, as a minimum, the following detail:

13.10.1 Method of testing (provide detail of applicable procedure/standard)

13.10.2 All the measurements derived from the individual analyses ordered.

13.10.3 For DGA, all the standard gas ratios, as per standard **IEC 60599**.

13.10.4 Identify all measurements and ratios that do not comply or meet the limits specified in standard **IEC 60599**.

13.10.5 Each report shall be signed by the Lab Manager or duly delegated authorised person.

13.10.6 The report shall be comprise a hard copy as well as an electronic copy (pdf) as per the sample Report Form see (13.11 below).

13.10.7 The report shall be submitted to the **Manager HV Substations** or his duly authorised person.

- 13.10.8 The Tenderer is expected to maintain a secure record of all the measurements, ratios and comments provided for each test, as specified above, in a Microsoft Excel spreadsheet as per sample to be proved by the City of Cape Town. This analysis spreadsheet sheet shall be made available to the City on request, as and when required, at no extra cost.
- 13.10.9 For any emergency analyses ordered, the Tenderer shall, in addition to the above requirements, provide an initial summary report to: **Manager HV Substations** or his duly authorised person telephonically, followed by an email on the first working day thereafter. This initial emergency analysis report shall identify and convey any unusual or out of limits measurements/ratios.'
- 13.10.10 All data acquired by the Tenderer in the process of executing any of the work and services specified in this document, is and shall remain the exclusive property of the City of Cape Town, and may not be reproduced, shared or used for any other purpose without the explicit permission in writing from the CCT Representative. The database shall be transferred to City on completion of the contract.

13.11 SAMPLE REPORT FORM

The sample report form shall contain the following minimum information for each transformer sampled:

Substation name:		Emergency Sample:	
Plant no. or name:		Work order No.:	
Sample Point:		Sample Container no:	
Make:		Date Sampled:	
Serial number:		Date Received:	
Plant voltage (kV):		Date Logged:	
Capacity (MVA):		Date Authorised:	
Oil volume (L):		Ambient temperature:	
Sampling Reason:		Oil sample temperature:	
Type of Oil (New/Regen/In Service)		Name of Sampler	
Sampling condition (Prevailing weather condition):			

In addition, the test report shall detail the results, analysis and interpretation thereof as specified.

13.12 SCHEDULING AND PROGRAMMING OF ROUTINE SAMPLING AND ANALYSES

- 13.12.1 CCT shall provide a detailed work schedule, list of required tests, as well as the relevant purchase orders to the Tenderer representative.
- 13.12.2 Electrical equipment to be sampled is located in three High Voltage Substation areas, viz HV SS East, North and South. The contact persons to acquire access to sites in these areas will be provided to the successful Tenderer.

13.13 QUALITY CONTROL

- 13.13.1 CCT will routinely cross check transformer oil sample analyses either by ordering duplicate or repeat tests, or by ordering such verification tests from an independent laboratory.
- 13.13.2 Should it be established that erroneous test results have been supplied by the Tenderer, CCT retains the right to order new samples, analyses and test reports at no cost to the City.
- 13.13.3 The tenderer shall submit along with the tender documentation: -
 - 13.13.3.1 An example of a recent oil test certificate
 - 13.13.3.2 Quality management policy
 - 13.13.3.3 Health and safety plan
 - 13.13.3.4 Environmental management policy.

13.14 HEALTH AND SAFETY SPECIFICATION

- 13.14.1 The Tenderer shall comply with all the applicable requirements of the Occupational Health and Safety Act and Regulations.
- 13.14.2 The Tenderer shall enter into an Occupational Health and Safety Agreement with the Employer before the commencement of any work on site.
- 13.14.3 The Tenderer shall:
 - 13.14.3.1 Create and maintain a safe and healthy work environment;
 - 13.14.3.2 Execute the work in a manner that complies with all the requirements of the OHS Act and all its associated regulations, and in so doing, minimize the risk of incidents occurring; and
 - 13.14.3.3 Respond to the instructions issued by the City's Representative
- 13.14.4 The Tenderer shall ensure that all workers are issued with the necessary personal protective clothing. This is a requirement for anyone entering the High Voltage substations, in accordance to NRS 040.
- 13.14.5 The Tenderer shall with respect to the work sites and the work that is contemplated:
 - Cause a preliminary hazard identification to be performed by a competent person before commencing any physical construction activity;

- 13.14.6 Evaluate the risks associated with such work constituting a hazard to the health and safety of such employees and the steps that need to be taken to comply with the OHS Act; and
- 13.14.7 As far as is reasonably practicable, prevent the exposure of such employees to the hazards concerned or, where prevention is not reasonably practicable, minimize such exposure.
- 13.14.8 The sampling work on site shall only be executed by personnel with a valid NRS 040 / ORHVS Responsible Persons authorization, these personnel shall have the necessary competence and experience to work safely within a substation and in close vicinity of live equipment and should provide the proof of a valid NRS 040 certificate. The successful Bidder will be required to provide the CCT representative with copies of the above authorisation within 10 working days of the Commencement Date.
- 13.14.9 The Tenderer shall carry out regular inspections and audits to ensure that the work is being performed in accordance with the requirements of this Specification.
- 13.14.10 It is the Tenderer's responsibility to ensure that all applicable statutory codes and conditions are conformed to, including those regulating work in the vicinity of active machinery and energized power lines. The Tenderer shall ensure that personnel are qualified, and show proof of competence upon request.
- 13.14.11 The Tenderer shall before the commencement of any work on Site and during such work, cause risk assessment(s) to be performed by a competent person. Such assessment(s) shall as a minimum:
- 13.14.11.1 Identify the risks and hazards to which persons may be exposed to;
 - 13.14.11.2 Analyse and evaluate the identified risks and hazards;
 - 13.14.11.3 Implement work procedures, including the use of any personal protective equipment or clothing and the undertaking of periodic "toolbox talks" or inductions before undertaking hazardous work, in order to mitigate, reduce or control the risks and hazards that have been identified;
- 13.14.12 The Tenderer shall ensure that as far as is reasonably practicable, ergonomic related hazards are also analysed, evaluated and addressed in the risk assessment.
- 13.14.13 The Tenderer shall ensure that oil spills are cleaned and shall provide their oil spill clean-up kit. It is their responsibility to dispose oil and chemicals.

14. SAMPLING TRANSFORMERS THAT CONTAIN PCBS:

- 14.1. Prior to working on suspected or confirmed PCB-contaminated equipment, a special Health, Safety and Environmental plan and protection measures must be in place.

- 14.2. Only staff that have been trained on chemical safety, electrical safety and spill management are permitted to sample and handle oil from a transformer that is known or suspected to contain PCBs.

15. PROTECTIVE CLOTHING

- 15.1. The Tenderer must provide all protective clothing for employees under his control. This is to include arc flash overalls, boots, hard hats and any other protective clothing required.
- 15.2. The Tenderer needs to provide lanyards or safety belts for working at heights.
- 15.3. A well maintained and stocked first aid box supplied by the Tenderer shall always be made available for use in case of emergency at the worksite.

16. COVID-19 RISK ASSESSMENT AND COMPLIANCE

- 16.1. The Tenderer must be **Covid-19** compliant or any other requirement for a disaster/pandemic and must ensure that its employees comply in order to mitigate the risks on-site as far as possible as per the gazette/instructions/regulations communicated.
- 16.2. It is essential that Tenderers carry out a risk assessment on-site. The Tenderer must assign an employee with the task of being a dedicated COVID-19 protocol monitor to ensure continuous compliance, particularly relating to access control, eating areas and toilet/washing facilities.
- 16.3. The Tenderer must ensure that their employees know the compliance protocols and are screened before going to a site.
- 16.4. The Tenderer transport must be well-ventilated and have space to sit well apart. Masks should be worn in both employer and public transport and employees should ensure that their hands are sanitised before getting into a vehicle and then again after getting out.
- 16.5. There should be only one access point to a site, and everyone entering must be screened and socially distanced whilst they wait to enter. There should also be a separate exit point from the site to prevent crowding.
- 16.6. Social distancing is not always possible during work, so all workers must wear masks at all times. Handwashing stations should be available in strategic areas. All commonly used tools must be sanitised before and after use.

17. SUBMISSION OF INVOICES

- 17.1. The Tenderer will be required to submit invoices and prescribed handover checklists on completion of the work for which he will be held responsible.
- 17.2. The invoices and checklists will be countersigned by the CCT Representative; after which it will be submitted to the City's Accounts Payable Department.

18. RESPONSIBILITY IN TERMS OF THE OHS ACT

- 18.1. The Tenderer shall be responsible for complying with the Occupational Health and Safety Act, 85 of 1993, and specifically the Construction Regulations.
- 18.2. The Tenderer shall be responsible for the safety of the public and liable for any accident or injury to any member of the public, as a direct result of ongoing contract work.
- 18.3. Repeated non-performance by a Tenderer will result in the City initiating the default process which may lead to penalties and termination of the contract.
- 18.4. No work shall be undertaken without prior approval of the CCT Representative.

ANNEXURE A**PARTICULAR SPECIFICATION PXZ - TRANSFORMER GAS SAMPLING PROCEDURE****PXZ.1 SCOPE**

This procedure deals with the methods for sampling and analysis of free gases and for sampling and analysis of gases dissolved in oil, from oil-filled equipment such as power and instrument transformers.

PXZ.2 SAMPLING**Sampling of Gases from Gas Cushions and Gas-Collecting (Buchholz) Relays*****General Remarks***

- Gas samples from relays should be taken from the equipment with the minimum delay.
- Changes in composition caused by the selective reabsorption of components may occur if free gases are left in contact with oil certain precautions are necessary in the taking of gas samples.
- The connection between the sampling device and the sampling vessel must avoid the ingress of air.
- Temporary connection should be as short as possible any rubber or plastic tubing used should have been proved to be impermeable to gases.
- Gas samples should be properly labelled and analysed without delay and in any case within 7 days.
- Oxygen, if present in the gas, may react with any oil drawn out with the sample. Oxidation is delayed by excluding light from the sample, for example, by wrapping the syringe in aluminium foil.
- The transport of samples is facilitated by the use of special containers which hold the samples firmly in place during transport.

PXZ.3 SAFETY

All work shall be carried out in accordance with the Occupational Health and Safety Act and Regulations.

PXZ.4 GENERAL REQUIREMENTS

- a) An impermeable oil resistant plastic or rubber tube provided with a connector to fit onto a suitable sampling connection of the relay or gas cushion.

- b) A gas-tight syringe of suitable size (25 cm³ to 250 cm³). Medical or veterinary quality glass syringes with ground-in plungers may be suitable; alternatively, syringes with oil proof seals may be used.
- c) Transport containers - These should be designed to hold the syringe firmly in place during transport.

PXZ.5 SYRINGE SAMPLES FOR DISSOLVED GAS ANALYSIS

The same sampling point shall be used for every routine sample. This shall be labelled "Routine sampling point."

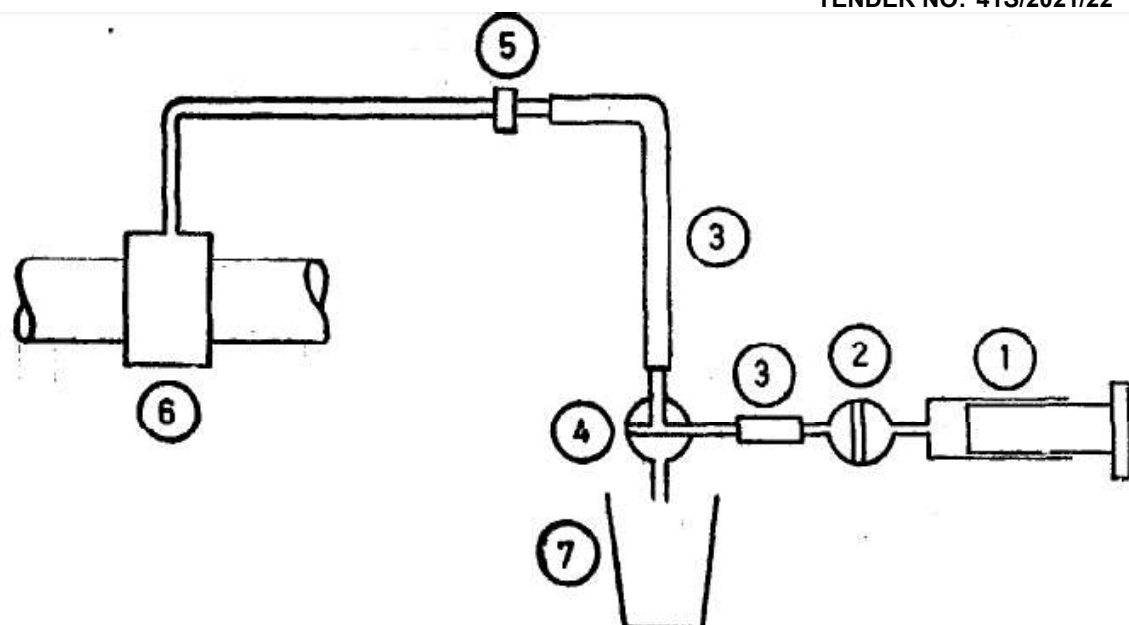
- a) Units with a Buchholz gas relay this valve at the end of the Buchholz relay oil pipe shall be used as the routine sampling point and it shall be marked accordingly.

NOTE: It may be necessary to replace inadequately sized copper tubing and/or valve to obtain a satisfactory flow of approximately 500 ml/min take a maximum of 5 min to fill a 1l sample container.

- b) Units without a Buchholz relay or tubing to ground level from the Buchholz relay the transformer main tank drain valve shall be used as the routine sampling point and it shall be marked accordingly.
- c) The plastic stopcock, which comes with the syringe, must remain firmly affixed to the syringe at all times to prevent leaks and to securely close the syringe for shipment.
- d) When obtaining oil samples for gas analysis, it is important that the sample never be subjected to a vacuum, which would tend to degas the oil and lead to inaccurate test results.
- e) This means that the syringe should be filled without pulling on the plunger. It will help to follow the sampling procedure if you remember that the handle of the plastic stopcock points to the closed port of the stopcock.

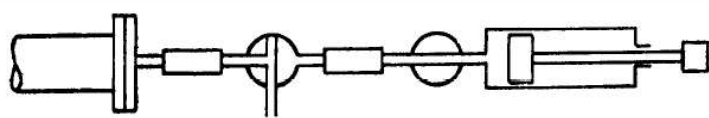
PXZ.6 SAMPLING PROCEDURE

- a) The apparatus to be sampled should be under positive pressure.
- b) For transformers sealed with an inert gas, check the pressure gauge to make sure it does not indicate a negative pressure.
- c) The head of oil in the transformer may be enough to overcome a partial vacuum and allow the sample to be taken.
- d) To ensure that the vacuum will not draw air into the transformer, attach a length of Tygon tubing, filled with clean oil, to the sampling valve before cracking the valve open.
- e) Carefully observe the direction of oil movement in the tube and close the valve immediately if the oil flow is towards the transformer. Do not allow air to be drawn into the transformer! Air can only enter the transformer when it is under a vacuum.
- f) The valve through which the sample is to be taken should be flushed by allowing about half of a gallon of oil to flow to a waste container the connections should be possible and filled with oil at the start of sampling.
- g) Sampling valve is opened. If a positive pressure exists, the three-way cock is carefully opened and any oil present allowed to flow to waste when gas reaches the three-way cock, the latter is turned to disconnect the waste and connect the syringe.
- h) Cock is then opened and the syringe allowed to fill under the hydrostatic pressure, taking care that its plunger is not expelled.
- i) When a sufficient sample has been taken, cock is closed and the apparatus is disconnected.
- j) Any oil in the syringe is expelled by inverting the syringe and applying gentle pressure to the plunger.
- k) In the absence of a positive pressure within the equipment, a supplementary air pump should be connected between the equipment sampling valve and cock and used to pump gas from the equipment. The equipment sampling valve must be closed at the end of sampling.

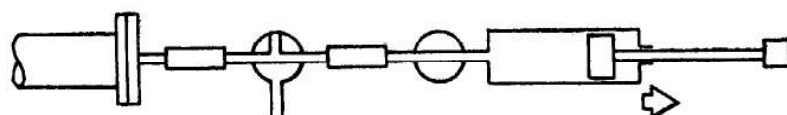


- | | |
|--------------------|--|
| 1 Syringe | 5 Equipment sampling valve |
| 2 Cock | 6 Gas-collecting relay and cushion valve |
| 3 Connecting tubes | 7 Waste vessel |
| 4 Three-way cock | |

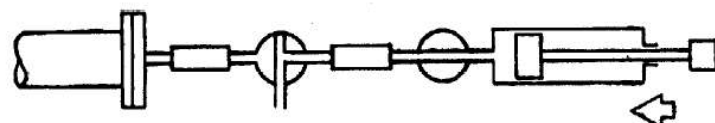
FIG. 1 SAMPLING BY SYRINGE



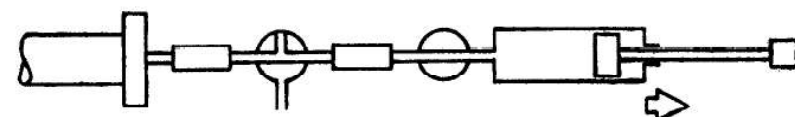
a) Flushing connection.



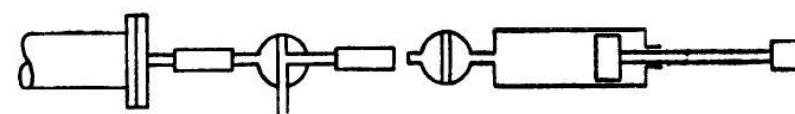
b) Wetting and flushing of syringe.



c) Emptying of syringe.



d) Taking of sample.



e) Disconnecting of syringe.

ANNEXURE B**PARTICULAR SPECIFICATION PXZ - TRANSFORMER AND NER OIL SAMPLING
PROCEDURE****PXZ.1 SCOPE**

This specification covers oil sampling for transformers and neutral earthing resistors compensators

PXZ.2 DEFINITIONS

Energizing: When voltage is applied to the unit. This will include the term “soaking” or on load.

Filtered oil (polishing): Oil that has been filtered to improve the dielectric strength to 70 kV/2.5mm gap and water content to 10mg/kg.

Specialist: An experienced person who regularly performs specific tasks for which he has been specially educated and trained and of which he has and maintains an in depth knowledge.

Topping- up: Refers to the action of correcting the oil level in a conservator tank, where the level of the oil is not lower than the Buchholz relay. If the oil is below the Buchholz level, the Filling procedure shall apply.

New oil: Virgin oil which complies in all respects with SABS 555. However, the following test limits shall apply before filling into dedicated oil containers for shipment and usage.

- Dielectric strength (DS) not lower than 70kV/2.5mm gap.
- Water Content (WC) not more than 10mg/Kg (or ppm).

Regenerated oil: Reprocessed used oil which complies in all respects with SABS 555

However, the following test limits shall apply before filling into dedicated oil containers for shipment and usage,

PXZ.3 SAFETY

All work shall be carried out in accordance with the Occupational Health and Safety Act and Regulations.

PXZ.4 GENERAL REQUIREMENTS

- a) Oil sampling shall be carried out as described below.
- b) Oil samples shall be clearly and fully labelled as described below

- c) Oil samples shall be protected against rough handling and extreme temperatures during storage and transport. An approved sampling device for taking samples from drums to test for dielectric strength (DS) and water content (WC).

PXZ.5 PREFERRERD OIL SAMPLING POINTS

The same sampling point shall be used for every routine sample. This shall be labelled "Routine sampling point."

a) **Units with a Buchholz gas relay**

This valve at the end of the Buchholz relay oil pipe shall be used as the routine sampling point and it shall be marked accordingly.

NOTE: It may be necessary to replace inadequately sized copper tubing and/or valve to obtain a satisfactory flow of approximately 500 ml/min take a maximum of 5 min to fill a 1l sample container

b) **Units without a Buchholz relay or tubing to ground level from the Buchholz relay**

The transformer main tank drain valve shall be used as the routine sampling point and it shall be marked accordingly.

PXZ.6 GENERAL OIL SAMPLE PROCEDURE

Precautions

Hazards: Do not climb onto "live" units to take oil samples

- a) Take data for the sample labels only from the units' nameplate, and NOT FROM LOGBOOKS
- b) Use only the approved oil sample tins and labels.
- c) Use only the marked sample points.

Buchholz sampling kit

- a) One 6 mm² 200 mm tube
- b) Sample tins
- c) Sample Labels
- d) One 10l bucket
- e) Chamois leather

Main tank drain valve sampling kit

- a) 50 mm valve flange and gasket
- b) Hose coupling
- c) One 1l hose
- d) Sample tins

- e) Sample labels
- f) One 10l/bucket
- g) Chamois leather
- h) Set of tools

Cautions

- a) An oil drum for waste oil shall be available on site. This oil shall be returned for recycling
- b) For correct water concentration, take routine samples only in fine weather.
- c) DO NOT touch or breathe onto oil sample.
- d) Clean the sampling flange and valves only with a chamois leather to avoid fibres.
- e) Clean all sampling apparatus.
- f) If the sample oil does come into contact with the sampler's hands or breath, the sample shall be retaken fibres in the oil will drastically reduce the dielectric strength.

PZX.7

UNITS FITTED WITH A BUCHHOLZ RELAY WITH TUBING TO GROUND LEVEL FOR DEGASSING SAMPLING

- a) The sample shall only be taken at ground level from the valve at the end of the tubing for de-gassing sampling
- b) Complete a sampling label, giving all the requested information including:
 - the reason for sampling
 - the top oil temperature (OTI- Oil Temperature Indicator)
 - Transformer data shall be taken from the transformer nameplate.
- c) Clean the sampling valve with a chamois leather
- d) Open the valve and allow approximately 0.5 l of oil to run into the waste bucket
Close the valve and connect the 6 mm² 200 mm tube to the valve
- e) Open the valve and again allow approximately 0.5l of oil to run through the tube into the waste bucket.
- f) Rinse the tin by half filling it with oil. Replace the cap and rotate the tin slowly, ensuring that the oil covers all areas inside the tin. Empty the tin into the waste bucket. Repeat twice
- g) When rinsing, do not shake the tin as foaming may occur. This will have an adverse effect on the test results, particularly the DGA, and possibly the DS, if tested soon afterwards.
- h) Hold the tube in the neck of the tin and while avoiding foaming fill the tin until the oil overflows. The tube shall not touch the oil at any stage.
- i) Place the tin on a flat surface and squeeze the sides very slightly until the oil overflows Replace the cap firmly before releasing the pressure.

- j) With the tin upside down, rotate the tin slowly while holding it close to the ear to listen for bubbles resulting from incomplete filling. Retake the sample if bubbles are heard.
- k) Ensure that samples arrive at the laboratory within one (1) week

PXZ.8

TRANSFORMER UNITS WITHOUT BUCHHOLZ RELAY

- a) Samples shall only be taken from the transformer main tank drain valve
- b) Complete a sampling label giving all the requested information including the reason for sampling and the top oil gauge temperature (OTI - Oil Temperature Indicator)
Transformer data shall be taken from the transformer nameplate
- c) Clean the sampling flange and valves with a chamois leather
- d) Remove the plug fit the hose coupling to the sampling flange and connect sampling hose
- e) Open the drain valve and allow approximately 5 l of oil to run vigorously into the bucket, thereby rinsing the hose and valve and removing any free water that may have collected in the valve and flange.
- f) Adjust the valve to give a steady flow. Do not operate the valve again until the sampling is complete.
- g) Rinse the tin by half filling it with oil Replace the cap and rotate the tin slowly ensuring that the oil covers all areas inside the tin. Empty the tin into the bucket.
Repeat twice
- h) When rinsing does not shake the tin as foaming may occur. This will have an adverse effect on the test results particularly the DGA and possibly the DS if tested soon afterwards
- i) Hold the tube in the neck of the tin and while avoiding foaming fill the tin until the oil overflow. The tube shall not touch the oil at any stage
- j) Place the tin on a flat surface and squeeze the sides very slightly until oil overflows. Replace the cap firmly before releasing the pressure.
- k) With the tin upside down rotate the tin slowly while holding close to the ear to listen for bubbles resulting from incomplete filling Retake the sample if bubbles are heard
- l) Ensure that samples arrive at the laboratory within one (1) week.

ENVIRONMENTAL MANAGEMENT SPECIFICATION**CONTENTS****E1 SCOPE****E2 INTERPRETATIONS**

- E2.1 Supporting specifications
- E2.2 Application
- E2.3 Definitions and abbreviations
 - E2.3.1 Environment
 - E2.3.2 Potentially hazardous substance
 - E2.3.3 Method Statement
 - E2.3.4 Reasonable
 - E2.3.5 Solid waste
 - E2.3.6 Contaminated water
 - E2.3.7 Working area
 - E2.3.8 Contractor's camp or construction camp
 - E2.3.9 Employer's Agent
 - E2.3.10 Employer's Agent's Representative (ER)
 - E2.3.11 Environmental Officer (EO)
 - E2.3.12 Environmental Control Officer (ECO)
 - E2.3.13 Environmental Site Officer (ESO)
 - E2.3.14 Abbreviations
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E3 MATERIALS

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- E4.2 Ablution and toilet facilities
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- E4.4 Solid waste management
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- E4.6 Site structures
- E4.7 Lights
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E5 CONSTRUCTION

- E5.1 Method Statements
 - E5.1.1 Method Statements to be provided within 14 days from the Commencement Date
- E5.2 Environmental Awareness Training
 - E5.2.1 Training Course for Management and Foremen
 - E5.2.2 Training Course for Site Staff and Labour
- E5.3 Contractor's Environmental Representative (ESO)
- E5.4 Site division, demarcation and "no go" areas
- E5.5 Access routes/ haul roads
- E5.6 Construction personnel information posters
- E5.7 Fire control
- E5.8 Emergency procedures
- E5.9 Health and safety
- E5.10 Community relations
- E5.11 General protections in terms of the National Heritage Resources Act, 25 of 1999
- E5.12 Protection of natural features
- E5.13 Protection of flora and fauna
- E5.14 Erosion and sedimentation control
- E5.15 Aesthetics

- E5.16 Temporary site closure
- E5.17 Asphalt and bitumen
- E5.18 Dust
- E5.19 Contractor's advertising signage
- E5.20 Clearance of Site on completion

E6 TOLERANCES

- E6.1 Fines

E7 TESTING - - not applicable

E8 MEASUREMENT AND PAYMENT - not applicable

- E8.1

ANNEXURE A: ENVIRONMENTAL METHOD STATEMENT
 ANNEXURE B: ENVIRONMENTAL SITE INSPECTION CHECKLIST
 ANNEXURE C: CONSTRUCTION PERSONNEL INFORMATION POSTER

E: ENVIRONMENTAL MANAGEMENT SPECIFICATION

E1 SCOPE

The Environmental Management Programme (EMP) for the project is comprised of this Environmental Management (EM) Specification and its Annexures, including the "Additional environmental issues deemed to form part of the Environmental Management Specification" attached as Annexure D hereto, which together cover the requirements for controlling the impact on the environment of construction activities.

E2 INTERPRETATIONS

E2.1 Supporting specifications

The following standardised specification shall, *inter alia*, apply to this Contract:

- a) SANS 1200A, as may be varied or added to in the Scope of Work

E2.2 Application

This EM Specification contains clauses that are generally applicable to the undertaking of construction works in areas where it is necessary to impose pro-active controls on the extent to which the construction activities impact on the environment.

In the event of any difference or discrepancy between the provisions of the Standardised Specifications and the provisions of the EM Specification, the latter shall prevail.

E2.3 Definitions and abbreviations

For the purposes of this EM Specification the following definitions and abbreviations shall apply:

E2.3.1 Environment

The surroundings within which humans exist and that are made up of -

- a) the land, water and atmosphere of the earth;
- b) micro-organisms, plant and animal life;
- c) any part or combination of i) and ii) and the interrelationships among and between them; and
- d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

E2.3.2 Potentially hazardous substance

A substance which, in the reasonable opinion of the Employer's Agent, can have a deleterious effect on the environment.

E2.3.3 Method Statement

A written submission by the Contractor to the Employer's Agent in response to the EM Specification or a request by the Employer's Agent, setting out the plant, materials, labour and method the Contractor proposes using to carry out an activity, in such detail that the Employer's Agent is enabled to assess whether the Contractor's proposal is in accordance with the Scope of Work and/or will produce results in accordance with the EM Specification.

E2.3.4 Reasonable

Unless the context indicates otherwise, means reasonable in the opinion of the Employer's Agent after he has consulted with a person suitably experienced in "environmental implementation plans" and "environmental management plans" (both as defined in the National Environmental Management Act, 107 of 1998).

E2.3.5 Solid waste

All solid waste, including construction debris, chemical waste, excess cement/ concrete, wrapping materials, timber, tins and cans, drums, wire, nails, domestic waste, dead vegetation, asphalt products, etc.

E2.3.6 Contaminated water

Water contaminated by the Contractor's activities containing cements, concrete, lime, paint products, thinners, turpentine, chemicals, fuels, oils washing detergents, etc.

E2.3.7 Working area

Any area within the boundaries of the Site where construction is taking place.

E2.3.8 Contractor's camp or construction camp

The area designated for all temporary site offices, storage areas, construction plant parking areas, staff welfare facilities, etc.

E2.3.9 Employer's Agent

The person/firm so named in the Contract Data, whose function is to administer the Contract as agent of the Employer, also known as the CCT Representative.

E2.3.10 Employer's Agent's Representative (ER)

The natural person appointed by the Employer's Agent in terms of the Contract, who shall observe the execution of the Works, examine and test materials and workmanship, and deliver and receive communications to/from the Contractor.

E2.3.11 Environmental Officer (EO)

Appointed by the Employer's Agent as his environmental representative on Site, with the mandate to enforce compliance with the EMP. The duties of the EO are stipulated in the City's guideline document for the EO and ER.

E2.3.12 Environmental Control Officer (ECO)

An independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of Environmental Authorisations (EAs), and the EMP for the project.

E2.3.13 Environmental Site Officer (ESO)

Employed by the Contractor as his environmental representative to monitor, review and verify compliance with the EMP by the Contractor. The ESO must ensure that he is involved at all phases of the construction (from site clearance to rehabilitation).

E2.3.14 Abbreviations

The following abbreviations occur in this EM Specification:

EMP - Environmental Management Programme
EM Specification – Environmental Management Specification
EO - Environmental Officer
ECO – Environmental Control Officer
ESO – Environmental Site Officer
ER – Employer's Agent's Representative

E2.4 Employer's Agent's authority to delegate

In terms of Clause 3.2.4 of the General Conditions of Contract, Second Edition, 2010 (GCC 2010), the Employer's Agent has the authority to appoint a representative. Other than the Employer's Agent's Representative (ER) in terms of Clause 3.2, this can be in the form of an Environmental Officer (EO), who shall be responsible for monitoring compliance with the EMP. All instructions given by the EO shall go through the ER, who will then convey these to the Contractor, except in the case of an environmental emergency, in which case the EO can issue an instruction directly to the Contractor. An environmental emergency is one which, in the opinion of the EO, would cause serious environmental harm if not addressed immediately.

Depending on the nature/environmental sensitivity of the Contract the following variations in the organisational structure are possible:

- a) The ER may work together with an EO; or
- b) There may be an ER only (for construction projects with low potential for causing significant environmental impacts). In this case the ER has responsibility for the EO's functions.
- c) There may be an independently appointed Environmental Control Officer (ECO) who will fulfil essentially the same functions as the EO. The ECO may work with just the ER (if there is no EO) or may work with both the ER and EO.

The term "Employer's Agent" in this EM Specification refers to the Employer's Agent as defined in Clause E2.3.9 acting through the ER/EO/ECO as delegated.

For this Contract, Employer's Agent's Representative(s) (ER) will be appointed. Depending on the location of the work site, the Employer's Agent's Representative(s) (ER) will be the following:

- HV Substations (South): Mr Ralph February
- HV Substations (North): Mr Robert Denton
- HV Substation (East): Mr David Walker

unless notified otherwise in writing by the Employer's Agent.

E3 MATERIALS**E3.1 Materials handling, use and storage**

The Contractor shall ensure that any delivery drivers are informed of all procedures and restrictions (including "no go" areas) required to comply with the EM Specification. The Contractor shall ensure that these delivery drivers are supervised during off-loading by someone with an adequate understanding of the requirements of the EM Specification.

Materials shall be appropriately secured to ensure safe passage between destinations. Loads, including but not limited to, sand, stone chip, fine vegetation, refuse, paper and cement, shall have appropriate cover to prevent them spilling from the vehicle during transit. The Contractor shall be responsible for any clean-up resulting from the failure by his employees or Contractors to properly secure transported materials.

All manufactured and or imported materials shall, where reasonably possible, be stored within the Contractor's camp and, if so required by the Employer's Agent, out of the rain. The location and method of protection of such materials stored outside of the Contractor's camp and the method of rehabilitation of these areas, shall be subject to the Employer's Agent's approval.

Stockpile areas shall be approved by the Employer's Agent before any stockpiling commences.

E3.2 Hazardous substances

Hazardous chemical substances (as defined in the Regulations for Hazardous Chemical Substances in GN 1179 (25 August 1995)) stored on Site for use during construction shall be stored in secondary containers which are clearly and appropriately marked/signed. The relevant Material Safety Data Sheets (MSDS) shall be available on Site. Procedures detailed in the MSDSes shall be followed in the event of an emergency situation.

If potentially hazardous substances are to be stored on Site, the Contractor shall inform the Employer's Agent of such substances and provide a Method Statement detailing the substances/ materials to be used, together with the storage, handling and disposal procedures of the materials. Hazardous substances shall be stored out of flood risk areas and disposal of these substances shall be at a licensed waste disposal facility.

E3.3 Storage and handling Sulphur hexafluoride (SF6)

All work activities involving the storage, testing, handling, re-use and disposal of Sulphur hexafluoride (SF6) shall conform to SANS 62271-4:2014 (High-voltage switchgear and control gear - Part 4: Handling procedures for SF6 and its mixtures) and such activities may only be executed by or under the direct supervision of suitable trained and certified personnel. Such personnel shall have been trained and certified in terms of current European Commission Regulations (Regulation EC/305/2008), or equivalent subject to approval by the Employer's Agent.

Accurate records that account fully for all quantities of re-used and new SF6 handled during the execution of the work shall be compiled and maintained.

All incidents that result in the accidental release of SF6 into the environment shall be brought to the attention of the Employer's Agent without delay.

E4 PLANT

(referring to "Construction Equipment" as defined in GCC 2010, and the Contractor's facilities as used in SANS 1200A)

E4.1 Fuel (petrol and diesel) and oil**E4.1.1 Storage**

If fuel and oil is to be stored on Site, then the Contractor shall submit a Method Statement covering the procedures for dealing with accidental hydrocarbon spillage and leaks, and detailing how these liquids will be stored, handled and disposed of.

The Employer's Agent shall approve the location of all fuel storage areas. All necessary approvals with respect to fuel storage and dispensing shall be obtained from the appropriate authorities. Symbolic safety signs depicting "No Smoking", "No Naked Lights" and "Danger" conforming to the requirement of SANS 1186 are to be prominently displayed in and around the fuel storage area. There shall be adequate fire-fighting equipment at the fuel storage area.

The Contractor shall ensure that all liquid fuels and oils are stored in tanks with lids, which are kept firmly shut and adequately secured. The capacity of the tank shall be clearly displayed and the product contained within the tank clearly identified using the emergency information system detailed in SANS 0232 part 1. Fuel storage tanks shall have a capacity not exceeding 9000 litres and shall be kept on site only for as long as fuel is needed for construction activities, on completion of which they shall be removed.

The tanks shall be situated on a smooth impermeable base with an earth bund. The volume inside the bund shall be 110% of the total capacity of the largest storage tank. The base may be constructed of concrete, or of plastic sheeting with impermeable joints, covered by a layer of compacted earth to protect the sheeting. The impermeable lining shall extend to the crest of the bund. The floor of the storage area shall be sloped to enable any spilled fuel and/or fuel-contaminated water to be removed easily.

If any rainwater collects in the bunded areas, it shall be promptly removed and taken off Site to a disposal site approved by the Employer's Agent.

Only empty and externally clean tanks may be stored on the bare ground. Empty and externally dirty tanks shall be sealed and stored on an area where the ground has been protected.

Adequate precautions shall be provided to prevent spillage during the filling of any tank and during the dispensing of the contents. If fuel is dispensed from 200 litre drums, the proper dispensing equipment shall be used, and the drum shall not be tipped in order to dispense fuel. The dispensing mechanism for the fuel storage tanks shall be stored in a waterproof container when not in use.

E4.1.2 Refuelling

The refuelling of plant and vehicles on site is prohibited.

E4.1.3 Treatment and remediation

Treatment and remediation of hydrocarbon spill and leak areas shall be undertaken to the satisfaction of the Employer's Agent. In the event of a hydrocarbon spill the source of the spillage shall be isolated and the spillage contained.

E4.2 Ablution and toilet facilities

Washing, whether of the person or of personal effects, defecating and urinating are strictly prohibited other than at the facilities provided.

The Contractor's personnel will be permitted to use the City's ablution facilities on site.

Should the City's ablution facilities on site not meet the following minimum requirements, the Contractor shall provide facilities which conform to the following minimum standards:

Toilet facilities provided by the Contractor shall occur in a ratio of not less than 1 toilet per 30 workers (1:15 is preferred) of each sex.

Toilet facilities shall be located on the substation premises, all to the satisfaction of the Employer's Agent. All portable toilets shall be adequately secured to the ground to prevent them toppling over as a result of wind or any other cause.

The Contractor shall ensure that the entrances to these toilets are adequately screened from view, that they are maintained in a hygienic state, serviced regularly, that no spillage occurs when they are cleaned and that contents are removed from Site. Toilets shall also be emptied before any temporary site closure for a period exceeding one week. Discharge of waste from toilets into the environment and burial of waste is strictly prohibited. The Contractor shall provide toilet paper at all times.

No ablution facilities shall be located closer than 50m to any water body

If applicable, a Method Statement shall be provided by the Contractor detailing the provision, location, and maintenance of ablution facilities.

E4.3 Eating areas

The Contractor shall designate eating areas on the work site. The feeding of, or leaving of food for, animals is strictly prohibited. Sufficient bins, as specified in Clause E4.4 below, shall be present in these areas.

Any cooking on Site shall be done on well-maintained gas cookers with fire extinguishers present. No open fires for cooking purposes shall be permitted, unless for occasional use in facilities specifically provided for this purpose and within the confines of the Contractor's camp.

The location of the eating and cooking area shall to the satisfaction of the Employer's Agent.

E4.4 Solid waste management

E4.4.1 Litter and refuse

The site shall be kept neat and clean at all times, littering is prohibited.

No on-site burying or dumping of any waste materials, vegetation, litter or refuse shall occur. The Contractor shall provide scavenger and weatherproof bins with lids, of sufficient number and capacity to store the solid waste produced on a daily basis. The lids shall be kept firmly on the bins at all times. Bins shall not be allowed to become overfull and shall be emptied regularly, at least once a week. Waste from bins may be temporarily stored on Site in a central waste area that is weatherproof and scavenger-proof, and which the Employer's Agent has approved. Wherever possible refuse shall be recycled, and containers for glass, paper, metals and plastics shall be provided and the contents delivered to suitable recycling facilities when necessary.

All other litter and refuse shall be disposed of off Site at an approved landfill site. The Contractor shall supply the Employer's Agent with a certificate of disposal.

E4.4.2 Construction waste

Where possible all construction waste or spoil material shall be recycled, either on Site or elsewhere. As a last resort all construction waste shall be disposed of off Site at an approved landfill site. The Contractor shall supply the Employer's Agent with a certificate of disposal.

E4.5 Contaminated water management

Potential pollutants of any kind and in any form shall be kept, stored, and used in such a manner that any spill or escape can be contained and the water table and/or any adjacent water courses or bodies are not endangered. Spill kits which can be used to contain and/or mop up spills shall be available. Water containing such pollutants as cements, concrete, lime, chemicals, oils and fuels shall be discharged into a conservancy tank for removal from the Site to a licensed disposal facility. This particularly applies to water emanating from concrete batching plants and to runoff from fuel storage, refuelling or construction equipment washing areas. Wash down areas shall be placed and constructed in such a manner so as to ensure that the surrounding areas are not polluted.

No paint products, chemical additives and cleaners, such as thinners and turpentine, may be disposed of

into the storm water system or elsewhere on Site. Brush/roller wash facilities shall be established to the satisfaction of the Employer's Agent.

A Method Statement shall be provided by the Contractor detailing the management of contaminated water.

Should contaminated water be released into the environment, specifically into a water course, monitoring thereof shall commence in accordance to the National Water Act, 36 of 1998, Section 21(f) – refer to GN 399 (26 March 2004). Contaminated water must not be released into the environment without authorisation from the relevant authority.

The Contractor shall notify the Employer's Agent immediately of any pollution incidents on Site and, at his own cost, take all reasonable measures to contain and minimise the effects of the pollution.

Any rehabilitation of the environment required as a result of such pollution shall be carried out by the Contractor at his own cost in accordance with a Method Statement approved by the Employer's Agent.

E4.6 Site structures - not applicable

E4.7 Lights

The Contractor shall ensure that any lighting installed on the Site for his activities does not cause a reasonably avoidable disturbance to other users of the surrounding area.

Lighting installed shall, as far as practically possible, be energy efficient. Lighting utilised on Site shall be turned off when not in use.

E4.8 Workshop, equipment maintenance and storage

No workshops or plant maintenance facilities shall be constructed on Site for performing major or routine maintenance of equipment and vehicles.

The Contractor shall ensure that in those areas where, after obtaining the Employer's Agent's approval, the Contractor carries out emergency or minor routine plant maintenance, there is no contamination of the soil, water sources or vegetation. Drip trays to collect waste oil and other lubricants shall be provided in any areas of the Site where such maintenance takes place. Drip trays must be emptied regularly and after rain, and the contents disposed of at a licensed disposal facility.

All vehicles and plant shall be kept in good working order. Leaking vehicles and plant shall be repaired immediately or removed from the Site.

The washing of vehicles and plant on Site shall be restricted to emergency or minor routine maintenance requirements only. Washing may only be undertaken in areas designated by the Employer's Agent.

E4.9 Noise

The Contractor shall limit noise levels (for example, by installing and maintaining silencers on plant). The provisions of SANS 1200A Clause 4.1 regarding "built-up areas" shall apply.

Appropriate directional and intensity settings are to be maintained on all hooters and sirens.

No amplified music shall be allowed on Site. The use of audio equipment shall not be permitted, unless the volume is kept sufficiently low so as to be unobtrusive. The Contractor shall not use sound amplification equipment on Site, unless in emergency situations.

Construction activities generating output levels of 85 dB(A) or more in residential areas, shall be confined to the hours 08h00 to 17h00 Mondays to Fridays. Should the Contractor need to do this work outside of the above times, he shall do so only with the approval of the Employer's Agent, and the surrounding communities shall be informed prior to the work taking place.

E5 CONSTRUCTION

E5.1 Method Statements

The Contractor shall submit the environmental method statements required within such reasonable time as the Employer's Agent shall specify or as required by the EM Specification. The Contractor shall not commence any activity until the Method Statement in respect thereof has been approved and shall, except in the case of emergency activities, allow a period of two weeks for consideration of the Method Statement by the Employer's Agent.

The Employer's Agent may require changes to a Method Statement if the proposal does not comply with

the specification or if, in the reasonable opinion of the Employer's Agent, the proposal may result in, or carries a greater than reasonable risk of, damage to the environment in excess of that permitted by the EM Specification.

Approved Method Statements shall be readily available on the Site and shall be communicated to all relevant personnel. The Contractor shall carry out the Works in accordance with the approved Method Statement. Approval of the Method Statement shall not absolve the Contractor from any of his obligations or responsibilities in terms of the Contract.

Changes to the way the Works are to be carried out must be reflected by amendments to the original approved Method Statements, and these amendments require the signature of both the Contractor and the Employer's Agent.

Method Statements shall consider all environmental hazards and risks identified by the Contractor and/or Employer's Agent and shall contain sufficient information and detail to enable the Employer's Agent to assess the potential negative environmental impacts associated with the proposed activity and shall cover applicable details with regard to:

- a) Construction or service procedures,
- b) materials and equipment to be used,
- c) getting the equipment to and from Site,
- d) how the equipment/material will be moved while on Site,
- e) how and where material will be stored,
- f) the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur,
- g) the control of fire,
- h) timing and location of activities,
- i) compliance/non-compliance with the EM Specification,
- j) any other information deemed necessary by the Employer's Agent.

The format to be used for the required method statements is bound in Annexure A of this EM Specification. The Contractor (and, where relevant, any sub-contractors) must also sign the Method Statement, thereby indicating that the work will be carried out according to the methodology contained in the approved Method Statement.

E5.1.1 Method Statements to be provided within 14 days from the Commencement Date

- a) Ablution Facilities: number of, location, cleaning, method of securing to the ground, etc. of portable toilets (E4.2), if applicable.
- b) Solid Waste Management: number of, type, location, cleaning, method of securing to the ground, etc. of bins (E4.4).
- c) Environmental Awareness Training: logistics for the environmental awareness courses for all the Contractor's management staff, as well as other employees (E5.2).
- d) Emergency Procedures for Accidental Hydrocarbon Leaks and Spillages (E4.1 and E5.8).
- e) Storage and handling of Sulphur Hexafluoride gas, including samples of the required SF6 record sheets

E5.2 Environmental Awareness Training

It is a requirement of this Contract that environmental awareness training courses are run for all personnel on Site. Two types of courses shall be run: one for the Contractor's and subcontractors' management, and one for all site staff and labourers. Courses shall be run during normal working hours at a suitable venue provided by the Contractor. All attendees shall remain for the duration of the course and sign an attendance register that clearly indicates participants' names on completion, a copy of which shall be handed to the Employer's Agent. The Contractor shall allow for sufficient sessions to train all personnel. Subsequent sessions shall be run for any new personnel coming onto Site. A Method Statement with respect to the organisation of these courses shall be submitted.

Notwithstanding the specific provisions of this clause, it is incumbent upon the Contractor to convey the spirit of the EM Specification to all personnel involved with the Works.

E5.2.1 Training Course for Management and Foremen

The environmental awareness training course for management shall include all management and foremen. The course, which shall be presented by the Employer's Agent or his designated representative, shall be of approximately one-hour duration. The course shall be undertaken prior to the commencement of work on Site.

E5.2.2 Training Course for Site Staff and Labour

The environmental awareness training course for site staff and labour shall be presented by the Contractor from material provided by the Employer's Agent. The course shall be approximately one-hour long. The course shall be undertaken not later than 3 working days after the commencement of work on Site, with sufficient sessions to accommodate all available personnel.

All the Contractor's employees, sub-contractors' employees and any Contractors' employees that spend more than 1 day a week or four days in a month on Site shall attend the Environmental Awareness Training Course for Site Staff and Labour

E5.3 Contractor's Environmental Representative (ESO)

The Contractor shall appoint an environmental representative, also called an Environmental Site Officer (ESO), who shall be responsible for undertaking a daily site inspection to monitor compliance with this EM Specification. The Contractor shall forward the name of the environmental representative (ESO) to the Employer's Agent for his approval. The environmental representative (ESO) shall complete Environmental Site Inspection Checklists (Annexure B attached hereto) and these shall be submitted to the Employer's Agent once a week.

E5.4 Site division, demarcation and "no go" areas

The Contractor shall restrict all his activities, materials, plant and personnel to within the Site or any particular working areas specified or indicated on the drawings, or as instructed by the Employer's Agent or the Employer's Agent's Representative(s).

The Contractor shall erect and maintain permanent and/or temporary fences of the type and in the locations specified elsewhere in the Scope of Work or on the drawings. Such fences shall, if so specified, be erected before undertaking any construction activities.

Where environmentally sensitive areas are specified as "no go" areas, the Contractor shall ensure that, insofar as he has the authority, no person, plant or material shall enter the "no go" areas at any time.

E5.5 Access routes/ haul roads – not applicable**E5.6 Construction personnel information posters**

The Contractor shall erect and maintain information posters for the information of his employees, depicting actions to be taken to ensure compliance with aspects of the EM Specification. A2 information posters, printed on white vinyl, shall be erected at the eating areas and any other locations specified by the Employer's Agent.

The specification for the poster is presented in Annexure C of this EM Specification. The symbols shall be black and the circles shall be red lines. The Contractor shall ensure that the construction personnel information posters are not damaged in any way, and shall replace a poster if any part of it becomes illegible.

E5.7 Fire control

Other than for cooking purposes as specified in Clause E4.3, no fires may be lit on Site. Any fires which occur shall be reported to the Employer's Agent immediately.

Smoking shall not be permitted in those areas where it is a fire hazard. Such areas shall include fuel storage and refuelling areas, and any other areas where the vegetation or other materials are susceptible to the start and rapid spread of fire.

In terms of the National Environment Management: Air Quality Act, 39 of 2004 and Community Fire Safety By-law, burning is not permitted as a disposal method.

The Contractor shall appoint a Fire Officer (who may be the ESO) who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedure to be followed. The Contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it. The Contractor shall forward the name of the Fire Officer to the Employer's Agent for his approval.

The Contractor shall comply with Clause 27 of the Construction Regulations, 2003 where applicable, and shall ensure that there is suitable and sufficient fire-fighting equipment available on Site at all times.

The Contractor shall be liable for any costs relating to the rehabilitation of burnt areas, should the fire be the result of the Contractor's activities on Site

The Contractor shall submit a Method Statement to the Employer's Agent covering the procedure to be followed

in the event of a fire.

E5.8 Emergency procedures

The Contractor's attention is drawn to the Method Statements required in terms of Clauses E4.1 and E5.7 above. Such Method Statements shall include procedures to be followed by the Contractor in the event of an emergency.

Furthermore, in the event of an emergency the Contractor shall contact the City of Cape Town's Emergency Call Centre by telephoning 107 or 021 480 7700 (from a cell phone). Telephone numbers of emergency services, including the local firefighting service, shall be posted conspicuously in the Contractor's office near the telephone.

E5.9 Health and safety

The Contractor shall comply with requirements of the Occupational Health and Safety Act, 85 of 1993 and Construction Regulations, 2003, the Health and Safety Specification and relevant clauses of GCC 2010, insofar as health and safety is concerned.

E5.10 Community relations - not applicable

E5.11 General protections in terms of the National Heritage Resources Act, 25 of 1999 - not applicable

E5.12 Protection of natural features - not applicable

E5.13 Protection of flora and fauna - not applicable

E5.14 Erosion and sedimentation control – not applicable

E5.15 Aesthetics

The Contractor shall take any requisite measures to ensure that construction activities do not have an undue negative impact on the aesthetics of the area.

E5.16 Temporary site closure

In the event of temporary site closure exceeding one week, the Contractor's ESO shall carry out checks and ensure that, amongst others, the following conditions pertain and report on compliance with this clause:

- a) Fire extinguishers are serviced and accessible.
- b) There is adequate ventilation in enclosed spaces.
- c) All hazardous substance stores are securely locked.
- d) Fencing and barriers are in place.
- e) Emergency and management contact details are prominently displayed and available.
- f) Wind and dust mitigation measures, e.g. straw, brush packs, irrigation, etc. are in place.
- g) Excavated and filled slopes and stockpiles are at a stable angle and capable of accommodating normal expected water flows.
- h) There are sufficient detention ponds or channels in place.
- i) Cement and materials stores are secured.
- j) Toilets are empty and secured.
- k) Central waste area and all refuse bins are empty and secured.
- l) Contaminated water conservancy tank empty.
- m) Any bunded areas are clean and treated with an approved product where applicable (e.g. Spill Sorb or Enretech #1 powder or equivalent).
- n) Drip trays are empty and secure

E5.17 Asphalt and bitumen – not applicable

E5.18 Dust

The Contractors shall be solely responsible, at his cost, for the control of dust arising from his activities on Site, and for any costs involved in damages resulting from the dust. The Contractor shall take all reasonable

measures to minimise the generation of dust

E5.19 Contractor's advertising signage

Any advertising on the Site or any part of the Works shall remain at the sole discretion of the Employer, who reserves the right to order, via the Employer's Agent, its removal, covering or re-sizing, wherever placed, at no cost to the Employer.

Apart from at the Contractor's camp, no signage advertising the Contractor, or any of its subcontractors, manufacturers, Contractors or service providers shall be placed, fixed or erected anywhere on the Site or on the Works without the prior approval of the Employer's Agent. No advertising signage will be permitted on any designated scenic route. Notwithstanding any prior approval given, the Employer's Agent may instruct the Contractor to remove, cover or re-size any advertising signage at any time at no cost to the Employer.

Advertising signage at the Contractor's camp shall be appropriately designed and sized with due consideration to the surrounding environment, views and sight lines.

Branding or identification markings on the Contractor's and subcontractor's vehicles and equipment is generally permitted, although the Employer reserves the right to instruct, via the Employer's Agent, the removal, covering or re-sizing of any branding, markings or signage, on any equipment (scaffolding, for example), which it considers inappropriate in the environment in which it is placed.

No third party advertising (that is, in respect of any person, business or product that is not associated with the Works) shall be permitted anywhere on the Site or Works.

E5.20 Clearance of Site on completion

On completion of the Works, and at final completion when all defects have been remedied or corrected, the Contractor shall, in addition to the requirements for clearance of the Site in terms of the Contract, ensure that he has complied with the following requirements in terms of this EM Specification:

E5.20.1 Clause E3.1

Clean-up of improperly secured transported materials, and rehabilitation of storage areas.

E5.20.2 Clause E4.1.3

Remediation of hydrocarbon spill and leak areas.

E5.20.3 Clause E4.4

Disposal of litter, refuse and Contractor's waste.

E5.20.4 Clause E5.4

Removal of temporary fences and Contractor's camp.

E5.20.5 Clause E5.5

Repair of access roads damaged by the Contractor, and rehabilitation of temporary access routes.

E5.20.6 Clause E5.7

Rehabilitation of burnt areas should a fire be the result of Contractor's activities on Site.

E5.20.7 Clauses E5.11 to 5.13

Rehabilitation of heritage and natural features, including vegetation which is damaged or disturbed, which required protection in terms of these clauses.

E5.20.8 Clause E5.14

Rectification where erosion and/or sedimentation has occurred due to the fault of the Contractor .

E5.20.9 Clause E5.19

Removal of Contractor's advertising signage.

E6 TOLERANCES

E6.1 Fines

Environmental management is concerned not only with the final results of the Contractor's operations, but also with the control of how these operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product, but also to the standard of the day-to-day operations required to complete the Works.

It is thus required that the Contractor shall comply with the EM Specification on an on-going basis and any failure on his part to do so will entitle the Employer's Agent to certify the imposition of a fine. Fines may be issued per incident at the discretion of the Employer's Agent. Such fines will be issued in addition to any remedial costs incurred as a result of non-compliance with the environmental specifications. The Employer's Agent will inform the Contractor of the contravention and the amount of the fine, and will deduct the amount from monies due in payment certificates issued under the Contract.

Maximum fines for the following transgressions by either the Contractor and/or his sub-contractors may be imposed by the Employer's Agent, as follows:

	Maximum fine per incident
a) Persistent and unrepaired oil leaks from machinery/not using a drip tray to collect waste oil and other lubricants/not using specified absorbent material to encapsulate hydrocarbon spillage/using inappropriate methods of refuelling (the use of a funnel rather than a pump).	R 3 000
b) Refuelling in areas not approved by the Employer's Agent.	R 3 000
c) Litter on Site.	R 1 000
d) Deliberate lighting of fires on Site.	R 5 000
e) Individual not making use of the Site ablution facilities.	R 1 000
f) Dust or excessive noise emanating from the site	R 1 000
g) Uncontrolled release of SF6 to the atmosphere	R 10 000

For each subsequent similar offence, the fine shall be doubled in value to a maximum value of R50 000.

E7 TESTING - not applicable**E8 MEASUREMENT AND PAYMENT - not applicable**

ANNEXURE A: ENVIRONMENTAL METHOD STATEMENT

CONTRACT:..... DATE:.....

PROPOSED ACTIVITY (give title of method statement and reference number from the EMP):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works - attach extra information to ensure accurate description given):

WHERE THE WORKS ARE TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:

End Date:

HOW THE WORKS ARE TO BE UNDERTAKEN (provide as much detail as possible, including annotated sketches and plans where possible):

Note: please give too much information rather than too little. Please ensure that issues such as emergency procedures, hydrocarbon management, wastewater management, access, individual responsibilities, materials, plant used, maintenance of plant, protection of natural features, etc. are covered where relevant

DECLARATIONS

1) EMPLOYER’S AGENT’S REPRESENTATIVE/ENVIRONMENTAL OFFICER/ENVIRONMENTAL CONTROL OFFICER

The work described in this Method Statement, if carried out according to the methodology described, appears to be satisfactorily mitigated to prevent avoidable environmental harm:

(signed)

(print name)

Dated: _____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to other signatories and that the Employer’s Agent’s Representative/Environmental Officer/Environmental Control Officer will audit my compliance with the contents of this Method Statement. I understand that this method statement does not absolve me from any of my obligations or responsibilities in terms of the Contract.

(signed)

(print name)

Dated: _____

3) EMPLOYER’S AGENT

The works described in this Method Statement are approved.

(signed)

(print name)

(designation)

Dated: _____

ANNEXURE B: ENVIRONMENTAL SITE INSPECTION CHECKLIST

To be submitted to the Employer's Agent once a week

CONTRACT:.....

DATE:.....
















ENVIRONMENTAL ASPECT	YES/ NO (✓ or X)	COMMENTS
• All new personnel on Site are aware of the contents of the EMP and have been through the environmental awareness course.		
• Contractor's camp is neat and tidy and the labourers' facilities are of an acceptable standard.		
• Sufficient and appropriate firefighting equipment is visible and readily available in the appropriate places.		
• Waste control and removal system is being maintained.		
• Fences are being maintained.	Not applicable	
• Drip trays are being utilised where there is a risk of spillage.		
• Bunded areas/drip trays are being emptied on a regular basis (especially after rain).		
• No leaks are visible from construction vehicles.		
• Refuelling of vehicles and plant occurs within designated areas, and appropriate refuelling apparatus and drip trays are being used.		
• "No go" areas, natural features, vegetation, etc. have not been damaged.		
• Dust control measures (if necessary) are in place and are effectively controlling dust.	Not applicable	
• Noise control measures (if necessary) are in place and are working effectively.		
• Erosion and sedimentation control measures (if necessary) are in place and are controlling effectively.	Not applicable	
• Material stockpiles are located within the boundary of the Site and are protected from erosion.	Not applicable	
• SF6 Control policy being adhered to?		
• Hazardous substances are stored correctly		

Completed by:.....

Signed:.....

ANNEXURE C: CONSTRUCTION PERSONNEL INFORMATION POSTER

ENVIRONMENTAL MANAGEMENT DO'S AND DON'TS

	Workers & equipment must stay inside the site boundaries at all times		Use the toilets provided Report full or leaking toilets
	Do not swim in or drink from streams Do not throw oil, petrol, diesel, concrete or rubbish in the stream Do not work in the stream without direct instruction Do not damage the banks or vegetation of the stream		Only eat in demarcated eating areas Never eat near a river or stream Put packaging & leftover food into rubbish bins
	Protect animals on the site Ask your supervisor or Contract's Manager to remove animals found on site		Do not litter - put all rubbish (especially cement bags) into the bins provided Report full bins to your supervisor The responsible person should empty bins regularly
	Do not damage or cut down any trees or plants without permission Do not pick flowers		Always keep to the speed limit Drivers - check & report leaks Ensure loads are secure & do not spill
	Put cigarette butts in a rubbish bin Do not smoke near gas, paints or petrol Do not light any fires without permission Know the positions of fire fighting equipment Report all fires Do not burn rubbish or vegetation without permission		Know all the emergency phone numbers
	Work with petrol, oil & diesel in areas marked for this Report any petrol, oil & diesel leaks or spills Use a drip tray under vehicles & machinery Empty drip trays after rain & do not throw this water into a river		Fines of between R1000 and R5000 Removal from site Construction may be stopped
	Try to avoid producing dust - wet dry ground & soil		Report any breaks, floods, fires, leaks and injuries to your supervisor Ask questions!
	Do not make loud noises around the site, especially near schools and homes Report or repair noisy vehicles		

HEALTH AND SAFETY SPECIFICATION**CONTENTS****H1 DEFINITIONS****H2 SCOPE****H3 INTERPRETATION****H4 GENERAL REQUIREMENTS****H5 ADMINISTRATION**

- H5.1 Application for construction work permit
- H5.2 Notification of intention to commence construction work
- H5.3 Occupational Health and Safety Agreement
- H5.4 Good standing with the Compensation Fund or a licensed compensation insurer
- H5.5 Emergency procedures
- H5.6 Health and safety file
- H5.7 Health and safety committee
- H5.8 Inspections, formal enquires and incidents
- H5.9 Personal protective equipment and clothing

H6 APPOINTMENTS

- H6.1 Appointment of construction manager
- H6.2 Appointment of construction supervisor, and health and safety officers
- H6.3 Other competent persons
- H6.4 Health and safety representative(s)

H7 EMPLOYER'S HEALTH AND SAFETY AGENT**H8 CREATING AND MAINTAINING A SAFE AND HEALTHY WORK ENVIRONMENT**

- H8.1 General
- H8.2 Risk assessment
- H8.3 Health and safety plans
- H8.4 Responsibilities towards employees and visitors
- H8.5 Subcontractors
- H8.6 Work permits and wayleaves
- H8.7 Access to the Site
- H8.8 First aid and emergency procedures
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- H8.10 Fire precautions
- H8.11 Facilities for workers

H9 GENERAL HAZARDS AND RISKS APPLICABLE TO WORK REQUIRED IN TERMS OF THIS TERM TENDER

- H9.1 Existing Site conditions
- H9.2 Environmental hazards
- H9.3 Construction materials (hazardous substances)
- H9.4 Fall protection (working at heights) (CR 10)
- H9.5 Electrical installations and machinery (CR 24)
- H9.6 Flammable liquids (CR 25)
- H9.7 Hazardous Chemical Substances (GNR 1179)
- H9.8 Confined spaces

H10 CCT HIGH VOLTAGE SUBSTATIONS: ADDITIONAL SAFETY SPECIFICATIONS

H: HEALTH AND SAFETY SPECIFICATION

H1 DEFINITIONS

For the purposes of this Specification, the definitions given in the Occupational Health and Safety Act, 85 of 1993 and the Construction Regulations, 2014, and the following definitions, shall apply:

- a) "Construction Regulations, 2014" means the Construction Regulations (GNR. 84 of 7 February 2014) published in terms of the OHS Act.
- b) "Contractor" means the Principal Contractor as defined in the Construction Regulations, 2014.
- c) "Employer" means the Client or his agent as defined in the Construction Regulations, 2014.
- d) "Employer's Agent" means the person/firm so named in the Contract Data whose function is to administer the Contract as agent of the Employer, acting through, if appointed, a Health and Safety Agent, also known as CCT Representative.
- e) "OHS Act" means the Occupational Health and Safety Act, 85 of 1993.
- f) "subcontractor" means any contractor employed by the Contractor to perform construction work.

H2 SCOPE

In terms of the OHS Act and the Construction Regulations, 2014 the Employer must provide the Contractor with a Health and Safety Specification, to which the Contractor must respond with a Health and Safety Plan for approval by the Employer.

The purpose of this Specification is to ensure that a Contractor entering into a contract with the Employer maintains an acceptable level of compliance with regard to health and safety issues during the performance of the Contract. In this regard the Health and Safety Specification forms an integral part of the Contract and the Contractor shall ensure that his subcontractors and/or Contractors comply with the requirements of this Specification.

H3 INTERPRETATION

The OHS Act and its associated regulations shall have precedence in the interpretation of any ambiguity or inconsistency between it and this Specification.

Responsibility for health and safety relating to the Works lies with the Contractor as described in this Specification. Nothing stated in or omitted from this Specification shall in any way limit the Contractor's obligations and liabilities in terms of the OHS Act.

H4 GENERAL REQUIREMENTS

The Contractor shall:

- a) create and maintain a safe and healthy work environment;
- b) execute the Works in a manner that complies with all the requirements of the OHS Act and all its associated regulations, and in so doing, minimize the risk of incidents occurring; and
- c) respond to the instructions issued by the Employer's Agent through the Employer's Agent's Representative, except in the case of a health and safety issue which requires the Contractor's immediate attention, in which case the Employer's Health and Safety Agent can issue an instruction directly to the Contractor.

H5 ADMINISTRATION

H5.1 Occupational Health and Safety Agreement

The Contractor shall enter into an Agreement with the Employer before the commencement of the Works on Site.

H5.2 Good standing with the Compensation Fund or a licensed compensation insurer

The Contractor shall provide the Employer's Agent with a letter of good standing from the Compensation

Commissioner or a licensed compensation insurer before the commencement of the Works on Site.

H5.3 Emergency procedures

The Contractor shall submit for acceptance to the Employer's Agent a health and safety emergency procedure, which includes but is not limited to fire, spills, accidents and exposure to hazardous substances, which:

- a) identifies the key personnel who are to be notified of any emergency;
- b) sets out details of available emergency services, including contact particulars; and
- c) the actions or steps which are to be taken during an emergency.

The Contractor shall within 24 hours of an emergency taking place notify the Employer's Agent in writing of the emergency and briefly outline what happened and how it was dealt with.

H5.4 Health and safety file

The Contractor shall ensure that a Health and Safety file, which shall include all documentation required in terms of the provisions of the OHS Act, the Construction Regulations, 2014 and this Health and Safety Specification, is open and kept on Site at all times.

The Health and Safety file shall be made available for inspection by any inspector, subcontractor, the Employer, the Employer's Agent, the Employer's Health and Safety Agent, or employee of the Contractor, upon the request of such persons.

The Contractor shall hand over the Health and Safety file to the Employer's Agent upon Works completion of the Contract and, if applicable, a certificate of compliance accompanied by a test report for the electrical installation in accordance with the provisions of the Electrical Installation Regulations, 1992.

H5.5 Health and safety committee

Where applicable, the Contractor shall establish a health and safety committee, and shall convene health and safety meetings as provided for in the OHS Act.

The Employer's Agent or the Employer's Health and Safety Agent shall be invited to attend such meetings as an observer.

The Contractor shall ensure that minutes of the health and safety committee meetings are kept.

H5.6 Inspections, formal enquires and incidents

The Contractor shall inform the Employer's Agent:

- a) beforehand of inspections, investigations or formal inquiries of which he has been notified by an inspector; and
- b) as soon as reasonably practicable of the occurrence of an incident (as defined in the OHS Act) on the Site.
- c) All incidents referred to in terms of Section 24 or the Occupational Health and Safety Act shall be reported by the Contractor to the Department of Labour

The Contractor shall record all incidents and notify the Employer's Agent of any incident, except in the case of a traffic accident on a public road, as soon as possible after it has occurred and report such incident to an inspector as designated in terms of the OHS Act.

The Contractor shall investigate all incidents and issue the Employer's Agent with copies of such investigations.

H5.8 Personal protective equipment and clothing

The Contractor shall ensure that all workers are issued with the necessary personal protective clothing.

H6 APPOINTMENTS

H6.1 Appointment of health and safety officers

The Contractor may, having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the Site, appoint a full-time or part-time health and safety officer in writing, who has in the Contractor's opinion the necessary competencies and resources, to assist the Contractor in the control of all health and safety related aspects on the Site.

The Contractor shall compile and maintain an organogram which outlines the roles and responsibilities of the health and safety officers.

Other competent persons

The Contractor shall appoint in writing competent persons to:

- a) induct employees in health and safety; and
- b) prepare a fall protection plan, if applicable.

H6.4 Health and safety representative(s)

The Contractor shall appoint in writing, if necessary in terms of the OHS Act, a health and safety employee representative(s), whose duties shall be as described in the OHS Act.

H7 EMPLOYER'S HEALTH AND SAFETY AGENT

The Employer's Health and Safety Agent shall:

- a) audit the Contractor's compliance with the requirements of this Specification prior to the commencement of any physical construction activities on the Site;
- b) accept or reject all safety plans, giving reasons for rejecting such plans;
- c) monitor the effective implementation of all safety plans;
- d) conduct periodic and random audits on the health and safety file to establish compliance with the requirements of this Specification and the Contractor's health and safety plan; and
- e) visit the site at regular intervals to conduct site inspections, and based upon such visits issue, wherever necessary, any notices and/or instructions to the Contractor or any of the Contractor's subcontractors with a copy to the Employer's Agent and, where relevant, to the Contractor.

The Contractor shall invite the Employer's Health and Safety Agent to audit compliance with the requirements of this Specification before commencing with any new activity on the Site.

The Contractor shall permit the Employer's Health and Safety Agent to audit the Contractor's compliance with the approved Health and Safety Plan, and shall provide any assistance and/or documentation as may be required in this regard.

The Employer's Health and Safety Agent shall be the CCT Representative and/or his duly appointed delegates:

- HV Substations (South): Mr Ralph February
- HV Substations (North): Mr Robert Denton/ Klaudius Meyer
- HV Substation (East): Mr David Walker

H8 CREATING AND MAINTAINING A SAFE AND HEALTHY WORK ENVIRONMENT

H8.1 General

The Contractor shall with respect to the Site and the works that are contemplated:

- a) cause a preliminary hazard identification to be performed by a competent person before commencing any physical activity;
- b) evaluate the risks associated with such work constituting a hazard to the health and safety of such employees and the steps that need to be taken to comply with the OHS Act; and
- c) as far as is reasonably practicable, prevent the exposure of such employees to the hazards concerned or, where prevention is not reasonably practicable, minimize such exposure.
- d) no structure or part of a structure is loaded in a manner which would render it unsafe;

The Contractor shall carry out regular inspections and audits to ensure that the Works are being performed in accordance with the requirements of this Specification and the Contractor's health and safety plan

H8.2 Risk assessment

The Contractor shall before the commencement of any work on Site and during such work, cause risk assessment(s) to be performed by a competent person appointed in writing. Such assessment(s) shall as a minimum:

- a) identify the risks and hazards to which persons may be exposed to;
- b) analyse and evaluate the identified risks and hazards based on a documented method;
- c) document a plan of safe work procedures, including the use of any personal protective equipment or clothing and the undertaking of periodic "toolbox talks" or inductions before undertaking hazardous work, in order to mitigate, reduce or control the risks and hazards that have been identified;
- d) provide a monitoring plan; and
- e) provide a review plan.

The Contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in the risk assessment.

The Contractor must review the relevant risk assessment -

- f) when an incident has occurred.

H8.3 Health and safety plans

The Contractor shall prior to commencing the Works to which this Specification applies, submit to the Employer's Health and Safety Agent for approval a suitable and sufficiently documented health and safety plan, based on this Specification and the risk assessment that is conducted.

The health and safety plan shall include, but not be limited to, the following:

- a) The safety management structure, including the names of all designated persons such as the construction supervisor and any other competent persons;
- b) Safety method statements and procedures to be adopted to ensure compliance with the OHS Act; Construction Regulations, 2014 and this Health and Safety Specification;
- c) The provision and use of temporary services;
- d) Personal protective equipment, devices and clothing required;
- e) Emergency procedures;
- f) Provision of workers' welfare facilities;
- g) Induction and training;
- h) Arrangements for monitoring and control to ensure compliance with the safety plan; and
- i) Provision and maintenance of the health and safety file and all other relevant documentation.

The Contractor shall provide each subcontractor with the sections of this Health and Safety Specification pertaining to the work to be performed by that subcontractor. The subcontractor shall provide the Contractor with a health and safety plan pertaining to his work, for incorporation into the Contractor's health and safety plan.

The Contractor shall discuss the submitted health and safety plan with the Employer's Health and Safety Agent, modify such plan in the light of the discussions and resubmit the modified plan for approval.

The Contractor shall apply the approved health and safety plan from the date of its approval and for the duration of the Works to which this Specification applies.

The Contractor shall conduct periodic audits for compliance with the approved health and safety plan at intervals agreed upon with the Employer's Health and Safety Agent, but at least once every month.

The Contractor shall update the health and safety plan whenever changes to the Works are brought about.

H8.4 Responsibilities towards employees and visitors

The Contractor shall, as far as is reasonably practicable, cause every employee to be made conversant with the hazards to his health and safety attached to any work which he has to perform, any article or substance which he has to produce, process, use, handle, store or transport and any plant or machinery which he is required or permitted to use, as well as with the precautionary measures which should be taken and observed with respect to those hazards or safe work procedures.

The Contractor shall ensure that all employees under his control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

The Contractor shall cause a record of all induction training to be kept, which indicates the names, identity numbers and job description of all those who attended such training.

The Contractor shall not allow or permit any employee to enter the Site, unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the Site at the time of entry.

The Contractor shall ensure that all of his employees have a valid medical certificate of fitness specific to the work to be performed and issued by an occupational health practitioner on the prescribed form.

The Contractor shall ensure that each visitor to the Site, save where such visitor only visits the site office and is not in direct contact with the work activities:

- a) undergoes health and safety instruction pertaining to the hazards prevalent on the Site; and
- b) is in possession of and using the necessary personal protective equipment.

The Contractor shall cause a record of all induction training to be kept in the Health and Safety file.

The Contractor shall provide suitable on-site signage to alert workers and visitors to health and safety hazards and requirements. Such signage shall include but not be limited to:

- c) prohibited unauthorized entrance;
- d) signage to indicate what personal protective equipment is to be worn; and
- e) activity related signs.

The Contractor shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a workplace.

H8.1 Subcontractors

The Contractor may only subcontract work in terms of a written subcontract and shall only appoint a subcontractor should he be reasonably satisfied that such a subcontractor has the necessary competencies and resources to safely perform the work falling within the scope of the subcontract.

The Contractor shall ensure that all of his obligations in respect of subcontractors in terms of the Construction Regulations, 2014 are adhered to.

H8.2 Work permits and wayleaves

The Contractor shall be responsible for obtaining all the wayleaves, permissions or permits applicable to working near any existing services or other infrastructure on Site, and shall abide by the safety conditions imposed by such wayleaves, permissions or permits.

H8.3 Access to the Site

The Contractor shall ensure that access to the Site is strictly controlled and that, where possible, only authorised persons are permitted onto the Site.

The Contractor shall control the access to Site of his own personnel and equipment, and that of his subcontractors and Contractors, in such a way so as to ensure that the safety of all public pedestrian and vehicular traffic is not compromised.

H8.4 First aid and emergency procedures

The Contractor shall, where more than five employees are employed at a workplace, provide a first aid box or boxes at or near the workplace, which shall be available and accessible for the treatment of injured persons at that workplace. Such first aid boxes shall contain suitable first aid equipment.

The Contractor shall ensure, where there are more than 10 employees employed on the Site, that for every group of up to 50 employees at that workplace at least one person is readily available during normal working hours who is in possession of a valid certificate of competency in first aid.

The following information shall be conspicuously posted in the offices of the Contractor for the duration of the Contract:

- Telephone numbers of emergency services;
- The names of all safety representatives and safety officers; and
- The name(s) of the competent first aider(s).

The Contractor shall post, in prominent places, notices indicating where the first aid box(es) is/are kept, as well as the name of the person in charge of the first aid box.

H8.5 Housekeeping

The Contractor shall ensure, *inter alia*, that suitable housekeeping is continuously implemented on the Site, including provision for the:

- removal of scrap, waste and debris, and materials which are no longer required for use, at appropriate intervals (in accordance with Construction Regulation 27); and
- proper stacking and storage of materials and equipment (in accordance with Construction Regulations 27 and 28).

H8.6 Fire precautions

The Contractor shall ensure that all appropriate measures are taken to minimise the risk of fire and that appropriate procedures and equipment are in place to deal with the event of a fire, all in accordance with Construction Regulation 29 and the Environmental Management Specification in Part 5.4.5 of the SPECIFICATION

H8.7 Facilities for workers

The Contractor shall provide ablution facilities and eating areas all as specified in the Environmental Management Specification in Part 5.4.5 of the SPECIFICATION.

H8.8 Materials, substances, tools and machinery used on site

No substandard materials, substances, tools and machinery shall be used on the site.

No use shall be made of any of the Employer's machinery/plant/equipment/substance/personal protective equipment or any other article without prior arrangement and written approval.

H9 GENERAL HAZARDS AND RISKS APPLICABLE TO WORK REQUIRED IN TERMS OF THIS TERM CONTRACT**H9.1 Existing Site conditions**

The Contractor shall take into account, *inter alia*, the following conditions when complying with the OHS Act:

- Live high, medium and low voltage electrical equipment
- Electrical switchgear filled with Sulphur Hexafluoride (SF6)
- Anticipated weather conditions
- Work in confined spaces

H9.2 Environmental hazards

The following commonly used materials and substances potentially pose an environmental hazard:

- Sulphur Hexafluoride (SF6)

H9.3 Hazardous substances (GNR 1179)

The following commonly used materials and substances potentially pose health and safety hazards:

- All materials contained in pressurized containers
- Insulating oils and compounds
- Electrical cleaning agents
- SF6 decomposition products

H9.4 Fall protection (working at heights) (CR 10)

H9.5 Cranes (CR22)

H9.6 Electrical installations and machinery (EMR, CR24)

H9.7 Flammable liquids (CR 25)

H9.8 Confined spaces

H9.9 Other

The high voltage GIS switchgear to be worked on, includes various mechanical and hydraulic drive mechanisms and energy storage devices.

H10 CCT HIGH VOLTAGE SUBSTATIONS: ADDITIONAL SAFETY SPECIFICATIONS:

H10.1 The work to be undertaken, will take place in high voltage substations located in proximity of other live equipment.

H10.2 No work may be commenced and executed without the required safety measures being implemented and receipt of a written permit, issued by a suitably authorised City of Cape Town High Voltage Operator.

Permits to Work can be obtained from:

- HV Substations (South): Mr. Ralph February 021 400 4798 / 084 888 1066
- HV Substations (North): Mr. Robert Denton 021 400 2325 / 084 306 8738
- HV Substation (East): Mr. David Walker 021 444 1562 / 082 293 2579

H10.3 The Contractor must deploy a Responsible Person, appointed in terms of NRS 040 or Eskom ORHVS, on site to ensure that all work is carried out safely.

H10.4 Besides the Responsible Person, all personnel deployed by the Contractor on site shall have been made aware of the safety risks present in high voltage installations and have been trained to execute all the specified work safely, and shall have previous work experience at high voltage installations.

H10.5 Where work is required in a prohibited or restricted area of the substation, the Contractor's personnel must be accompanied by a suitably authorised person from CCT EGD – High Voltage division.

H10.6 Should situations arise on site that are unsafe or appear to the personnel to be unsafe or dangerous, such personnel must promptly and applying reasonable judgement, interrupt their work on site and/or vacate the work site in order to secure themselves and the work place. They must inform the Responsible Person without delay, and shall only resume work after the work site has been adequately made safe or the affected equipment is safe to work on again.

19. TRADE NAMES OR PROPRIETARY PRODUCTS

Bid specifications may not make any reference to any particular trade mark, name, patent, design, type, specific origin or producer, unless there is no other sufficiently precise or intelligible way of describing the characteristics of the work, in which case such reference must be accompanied by the words "or equivalent".

TENDERERS MUST NOTE THAT WHEREVER THIS DOCUMENT REFERS TO ANY PARTICULAR TRADE MARK, NAME, PATENT, DESIGN, TYPE, SPECIFIC ORIGIN OR PRODUCER, SUCH REFERENCE SHALL BE DEEMED TO BE ACCOMPANIED BY THE WORDS 'OR EQUIVALENT'

20. EMPLOYMENT OF SECURITY PERSONNEL

All security staff employed by the supplier on behalf of the CCT or at any CCT property must be registered with Private Security Industry Regulatory Authority (PSiRA). Proof of such registration must be made available to the CCT's agent upon request.

21. FORMS FOR CONTRACT ADMINISTRATION

The supplier shall complete, sign and submit with each invoice, the following:

- a) Monthly Project Labour Report (**Annex 3**).
- b) B-BBEE Sub-Contract Expenditure Report (**Annex 4**).
- c) Joint Venture Expenditure Report (**Annex 5**).

The Monthly Project Labour Report must include details of all labour (including that of sub-contractors) that are South African citizens earning less than R350.00 per day, as adjusted from time to time (excluding any benefits), who are employed on a temporary or contract basis on this contract in the month in question.

In addition to the Monthly Project Labour Report the Supplier shall simultaneously furnish the CCT's Agent with copies of the employment contracts entered into with such labour, together with certified copies of identification documents, proof of attendance in the form of attendance register or timesheets as well as evidence of payments to such labour in the form of copies of payslips or payroll runs. If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it and proof of such acknowledgement shall be furnished to the CCT's Agent.

The Monthly Project Labour Reports shall be completed and submitted in accordance with the instructions therein.

The **B-BBEE Sub-Contract Expenditure Report** is required for monitoring the supplier's compliance with the sub-contracting conditions of the **Preference Schedule**.

The Joint Venture Expenditure Report is required for monitoring the joint venture's/consortium/partnership compliance with the percentage contributions of the partners as tendered, where the joint venture/consortium/partnership has been awarded preference points in respect of its consolidated B-BBEE scorecard.

(14.1) Monthly Project Labour Report (Example)

ANNEX 1

**CITY OF CAPE TOWN
MONTHLY PROJECT LABOUR REPORT**



Instructions for completing and submitting forms

General

- 1 The Monthly Project Labour Reports must be completed in full, using typed, proper case characters; alternatively, should a computer not be available, handwritten in black ink.
- 2 Incomplete / incorrect / illegible forms will not be accepted.
- 3 Any conditions relating to targeted labour stipulated in the Contract (in the case of contracted out services or works) shall apply to the completion and submission of these forms.
- 4 This document is available in Microsoft Excel format upon request from the City's EPWP office, tel 021 400 9406, email EPWPLR@capetown.gov.za.

Project Details

- 5 If a field is not applicable insert the letters: NA
- 6 Only the Project Number supplied by the Corporate EPWP Office must be inserted.
The Project Number can be obtained from the Coordinator or Project Manager or from the e-mail address in point 4 above.
- 7 On completion of the contract or works project the anticipated end date must be updated to reflect the actual end date.

Beneficiary Details and Work Information

- 8 Care must be taken to ensure that beneficiary details correspond accurately with the beneficiary's ID document.

- 9 A new beneficiary is one in respect of which a new employment contract is signed in the current month. A certified ID copy must accompany this labour report on submission.
- 10 Was the beneficiary sourced from the City's job seeker database?
- 11 The contract end date as stated in the beneficiary's employment contract.
- 12 Where a beneficiary has not worked in a particular month, the beneficiary's name shall not be reflected on this form at all for the month in question.
- 13 Training will be recorded separately from normal working days and together shall not exceed the maximum of 23 days per month
- 14 Workers earning more than the maximum daily rate (currently R450 excluding any benefits) shall not be reflected on this form at all.

Submission of Forms

- 15 Signed hardcopy forms must be scanned and submitted to the City's project manager in electronic (.pdf) format, together with the completed form in Microsoft Excel format.
- 16 Scanned copies of all applicable supporting documentation must be submitted along with each monthly project labour report. Copies of employment contracts and ID documents are only required in respect of new beneficiaries.
- 17 If a computer is not available hardcopy forms and supporting documentation will be accepted.

PROJECT DETAILS

Numbers in cells below e.g (6) refer to the relevant instruction above for completing and submitting forms

CONTRACT OR WORKS PROJECT NAME: (6)		EPWP SUPPLIED PROJECT NUMBER: (6)														
DIRECTORATE:		DEPARTMENT:														
CONTRACTOR OR VENDOR NAME:		CONTRACTOR OR VENDOR E-MAIL ADDRESS:														
CONTRACTOR OR VENDOR CONTACT PERSON:		CONTRACTOR OR VENDOR TEL. NUMBER:	CELL WORK													
PROJECT LABOUR REPORT CURRENT MONTH (mark with "X")																
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR				

ACTUAL START DATE (yyyy/mm/dd)								ANTICIPATED / ACTUAL END DATE (yyyy/mm/dd) (7)							
TOTAL PROJECT EXPENDITURE / VALUE OF WORK DONE TO-DATE (INCLUDING ALL COSTS, BUT EXCLUDING VAT)															
R															

MONTHLY PROJECT LABOUR REPORT

BENEFICIARY DETAILS AND WORK INFORMATION



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

CONTRACT OR WORKS PROJECT NUMBER:				Year Month		Sheet 1 of		
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No.	(8) First name	(8) Surname	(8) ID number	(9) New Beneficiary (Y/N)	Gender (M/F)	Disabled (Y/N)	(10) Job seeker database (Y/N)	Contract start date (DDMMYY)	Contract end date (DDMMYY)	(12) No. days worked this month (excl. training)	(13) Training days	(14) Rate of pay per day (R – c)
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
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16												
17												
18												
19												
20												

0 0 R -

Declared by Contractor or Vendor to be true and correct:	Name		Signature	
	Date			

Received by Employer's Agent / Representative:	Name		Signature	
	Date			

(14.2) BBEE SUB-CONTRACT EXPENDITURE REPORT (PRO FORMA)

TENDER NO: 41S/2021/22
DESCRIPTION: SAMPLING, TESTING AND ANALYSIS OF MINERAL INSULATING OIL FOR HIGH VOLTAGE ELECTRICAL EQUIPMENT.

SUPPLIER:

B-BBEE SUB-CONTRACT EXPENDITURE REPORT

Rand Value of the contract (as defined in Schedule 4: Preference Schedule) (P*)	R	B-BBEE Status Level of Prime Supplier	
---	---	---------------------------------------	--

Name of Sub-contractor (list all)	B-BBEE Status Level of supplier ¹	Total value of Sub-contract (excl. VAT) ¹	Value of Sub-contract work to date (excl. VAT) ¹	Value of Sub-contract work to Sub-contractors with a lower B-BBEE Status Level than supplier
Sub-contractor A		R	R	R
Sub-contractor B		R	R	R
Sub-contractor C		R	R	R
¹ Documentary evidence to be provided				Total: R
				Expressed as a percentage of P* %

Signatures

Declared by
supplier to be
true and
correct:

.....

Date:

Verified by
CCT Project
Manager:

.....

Date:

(14.3) PARTNERSHIP/ JOINT VENTURE (JV) / CONSORTIUM/ EXPENDITURE REPORT (PRO FORMA)

TENDER NO. AND DESCRIPTION: 41S/2021/22 SAMPLING, TESTING AND ANALYSIS OF MINERAL INSULATING OIL FOR HIGH VOLTAGE ELECTRICAL EQUIPMENT.

SUPPLIER:

PARTNERSHIP/ JOINT VENTURE (JV)/ CONSORTIUM EXPENDITURE REPORT

Rand value of the contract (as defined in Schedule 4: Preference Schedule) (P*)	R	B-BBEE Status Level of Partnership/ Joint Venture (JV)/ Consortium	
---	---	--	--

Name of partners to the Partnership/ JV / Consortium (list all)	B-BBEE Status Level of each partner at contract award	Percentage contribution of each partner as per the Partnership/ JV/ Consortium Agreement ¹	Total value of partner's contribution (excl. VAT) ¹ $B = A\% \times P^*$	Value of partner's contribution to date (excl. VAT) ¹ C	Value of partner's contribution as a percentage of the work executed to date $D = C/P^* \times 100$
		A			
Partner A		%	R	R	%
Partner B		%	R	R	%
Partner C		%	R	R	%

¹Documentary evidence to be provided

Signatures

Declared by
supplier to be
true and
correct:

.....

Date:

Verified by
CCT Project
Manager:

.....

Date: