

## **Transnet Freight Rail**

an Operating Division **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

### **REQUEST FOR QUOTATION (RFQ)**

**FOR THE : Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South**

<b>RFP NUMBER</b>	<b>: WRAC/KBC/39341</b>
	<b>[TFR/2023/08/0013/38702/RFQ]</b>
<b>ISSUE DATE</b>	<b>: 8 September 2023</b>
<b>NO COMPULSORY BRIEFING</b>	<b>: 21 September 2023</b>
<b>CLOSING DATE</b>	<b>: 3 October 2023</b>
<b>CLOSING TIME</b>	<b>: 10h00 am</b>
<b>TENDER VALIDITY PERIOD</b>	<b>: 12 weeks from closing date</b>

## Contents

### The Tender

#### Part T1: Tendering Procedures

T1.1 Tender Notice and Invitation to Tender

T1.2 Tender Data

#### Part T2: Returnable Documents

T2.1 List of Returnable Document

T2.2 Returnable Schedules

### The Contract

#### Part C1: Agreements and Contract Data

C1.1 Form of Offer and Acceptance

C1.2 Contract Data (Parts 1 & 2)

<b>Part C2: Pricing Data</b>	
C2.1	Pricing Instructions
C2.2	Price List
<b>Part C3: Scope of Work</b>	
C3.1	Service Information
<b>Part C4: Affected Property</b>	

## T1.1 TENDER NOTICE AND INVITATION TO TENDER

### SECTION 1: NOTICE TO TENDERERS

#### 1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

<b>DESCRIPTION</b>	<b>Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South</b>
<b>TENDER DOWNLOADING</b>	<b>This Tender may be downloaded directly from the National Treasury eTender Publication Portal at <a href="http://www.etenders.gov.za">www.etenders.gov.za</a> and the Transnet website at <a href="https://transnetetenders.azurewebsites.net">https://transnetetenders.azurewebsites.net</a> (please use <b>Google Chrome to access Transnet link</b>) <b>FREE OF CHARGE.</b></b>
<b>NON COMPULSORY TENDER CLARIFICATION MEETING</b>	<p>A <b>Non Compulsory</b> Tender Clarification Meeting will be conducted at <b>Beaconsfield, Transnet Property Building, Boardroom, 1 Austen Street, Kimberley on 21 September 2023, at 10:00 am [11 O'clock]</b> for a period of <math>\pm 1</math> (one) hour. [Tenderers to provide own transportation and accommodation].</p> <p>The non Compulsory Tender Clarification Meeting will start punctually and information will not be repeated for the benefit of Tenderers arriving late.</p> <p><b>Tenderers are to note:</b></p> <ul style="list-style-type: none"> <li>■ Tenderers and their employees, visitors, clients and customers entering Transnet Offices, Depots, Workshops and Stores will have to undergo breathalyser testing.</li> <li>■ All forms of firearms are prohibited on Transnet properties and premises.</li> <li>■ The relevant persons attending the meeting must ensure that their identity documents, passports or drivers licences are on them for inspection at the access control gates.</li> </ul> <p>Certificate of Attendance in the form set out in the <b>Returnable Schedule T2.2-06</b> hereto must be completed and submitted with your Tender as proof of attendance of the <b>non compulsory</b> tender briefing.</p>
<b>CLOSING DATE</b>	<b>10:00 am on (03/10/2023)</b> Tenderers must ensure that tenders are uploaded timeously onto the system. <b>If a tender is late, it will not be accepted for consideration.</b>

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## 2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

Log on to the Transnet eTenders management platform website (<https://transnetetenders.azurewebsites.net>);

- ☞ Click on “ADVERTISED TENDERS” to view advertised tenders;
- ☞ Click on “SIGN IN/REGISTER - for bidder to register their information (must fill in all mandatory information);
- ☞ Click on “SIGN IN/REGISTER” - to sign in if already registered;
- ☞ Toggle (click to switch) the “Log an Intent” button to submit a bid;
- ☞ Submit bid documents by uploading them into the system against each tender selected.
- ☞ **Tenderers are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by bidders as a result of the technical challenges. Please do not wait for the last hour to submit. A Tenderer can upload 30mb per upload and multiple uploads are permitted.**

b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing, delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.

c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

## 3. CONFIDENTIALITY

All information related to this RFP is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to

divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

#### 4. DISCLAIMERS

Tenderers are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this Tender and/or its receipt of a tender offer. In particular, please note that Transnet reserves the right to:

- 4.1. Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer.
- 4.2. Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3. Go to the open market if the quoted rates (for award of work) are deemed unreasonable;
- 4.4. Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.5. Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 4.6. Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.7. Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;
- 4.8. Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);
- 4.9. Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer.
- 4.10. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this RFP with the possible consequence of being disadvantaged or disqualified as a result thereof.
- 4.11. Transnet reserves the right to exclude any Tenderers from the tender process who has been convicted of a serious breach of law during the preceding 5 [five] years including but not limited to breaches of the Competition Act 89 of 1998, as amended. Tenderers are required to indicate in tender returnable on T2.2-17, **[Breach of Law]**

whether or not they have been found guilty of a serious breach of law during the past 5 [five] years.

4.12. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:

- *unduly high or unduly low tendered rates or amounts in the tender offer;*
- *contract data of contract provided by the tenderer; or*
- *the contents of the tender returnables which are to be included in the contract.*

5. Transnet will not reimburse any Tenderer for any preparatory costs or other work performed in connection with this Tender, whether or not the Tenderer is awarded a contract.

#### 6. NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Tenderer are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. The CSD can be accessed at <https://secure.csd.gov.za/>. Tenderer are required to provide the following to Transnet in order to enable it to verify information on the CSD:

Supplier Number..... and Unique registration reference number.....(**Tender Data**)

**Transnet urges its clients, suppliers and the general public  
to report any fraud or corruption to  
TIP-OFFS ANONYMOUS: 0800 003 056 OR [Transnet@tip-offs.com](mailto:Transnet@tip-offs.com)**

## T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts. The Standard for Uniformity in Construction Procurement was first published in Board Notice 62 of 2004 in Government Gazette No 26427 of 9 June 2004. It was subsequently amended in Board Notice 67 of 2005 in Government Gazette No 28127 of 14 October 2005, Board Notice 93 of 2006 in Government Gazette No 29138 of 18 August 2006, Board Notice No 9 of 2008 in Government Gazette No 31823 of 30 January 2009, Board Notice 86 of 2010 in Government Gazette No 33239 of 28 May 2010, Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015 and Board Notice 423 of 2019 in Government Gazette No 42622 of 8 August 2019.

This edition incorporates the amendments made in Board Notice 423 of 2019 in Government Gazette 42622 of 8 August 2019. (see [www.cidb.org.za](http://www.cidb.org.za)).

The Standard Conditions of Tender make several references to Tender data for detail that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause	Data
C.1.1	The <i>Employer</i> is <b>Transnet SOC Ltd (Reg No. 1990/000900/30)</b>
C.1.2	The tender documents issued by the <i>Employer</i> comprise: <p><b>Part T: The Tender</b></p> <p>Part T1: Tendering procedures      T1.1 Tender notice and invitation to tender  T1.2 Tender data</p> <p>Part T2 : Returnable documents      T2.1 List of returnable documents  T2.2 Returnable schedules</p> <p><b>Part C: The contract</b></p> <p>Part C1: Agreements and contract data      C1.1 Form of offer and acceptance  C1.2 Contract data (Part 1 &amp; 2)  C1.3 Form of Securities</p> <p>Part C2: Pricing data      C2.1 Pricing instructions  C2.2 Bill of Quantities</p> <p>Part C3: Scope of work      C3.1 Works Information</p> <p>Part C4: Site information      C4.1 Affected Property</p>
C.1.4	The Employer's agent is: Technical Buyer

Name:	Chris van Vuuren
Address:	Bloemfontein
Tel No.	(051) 408 2206
E - mail	Chris.vanVuuren@transnet.net

C.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:

**1. Stage One - Eligibility with regards to attendance at the compulsory clarification meeting:**

An authorised representative of the tendering entity or a representative of a tendering entity that intends to form a Joint Venture (JV) must attend the compulsory clarification meeting in terms C2.7

**2. Stage Two - Eligibility in terms of the Construction Industry Development Board:**

a) Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, designation of **3 EP or higher** class of construction work, are eligible to have their tenders evaluated.

b) Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

1. every member of the joint venture is registered with the CIDB;
2. the lead partner has a contractor grading designation of not lower than one level below the required class of construction works under consideration and possesses the required recognition status; and
3. the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **3 EP or higher** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations

The tenderer shall provide a certified copy of its signed joint venture agreement

***Any tenderer that fails to meet the stipulated eligibility criteria will be regarded as an unacceptable tender.***

**3. Stage Three - Functionality:**

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying for score for functionality is **60 points**.

The evaluation criteria for measuring functionality and the points for each criteria and, if any, each sub-criterion are as stated in C.3.11.3 below.

***Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.***

C.2.12 No alternative tender offers will be considered.

C.2.13. Each tender offer shall be in the **English Language**.

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C.2.13. The *Employer's* details and identification details that are to be shown on each tender offer are as follows:

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C2.15.

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Identification details:

The tender documents must be uploaded with:

- ☰ Name of Tenderer:
- ☰ Contact person and details:
- ☰ The Tender Number:
- ☰ The Tender Description: Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South

Documents must be marked for the attention of:

***Employer's Agent: Chris van Vuuren***

C.2.13. Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

9

C.2.15 The closing time for submission of tender offers is:

**Time: 10:00pm on the 3 October 2023**

Location: The Transnet e-Tender Submission Portal:

(<https://transnetetenders.azurewebsites.net>);

**NO LATE TENDERS WILL BE ACCEPTED**

C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.

C.2.23 The tenderer is required to submit with his tender:

1. A valid Tax Clearance Certificate issued by the South African Revenue Services.  
**Tenderers also to provide Transnet with a TCS PIN to verify Tenderers compliance status.**

2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South

African Accreditation System [**SANAS**], or a **sworn affidavit** confirming annual turnover and level of black ownership, in line with the code of good practice, together with the tender;

3. A valid CIDB certificate in the correct designated grading;
4. Proof of registration on the Central Supplier Database;
5. Letter of Good Standing with the Workmen’s compensation fund by the tendering entity or separate Letters of Good Standing from all members of a newly constituted JV.

**Note:** Refer to Section T2.1 for List of Returnable Documents

C3.11 The minimum number of evaluation points for functionality is: **60**

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

**Only those tenderers who attain the minimum number of evaluation points for Functionality will be eligible for further evaluation, failure to meet the minimum threshold will result in the tender being disqualified and removed from any further consideration.**

**Functionality Criteria**

The functionality criteria and maximum score in respect of each of the criteria are as follows:

Functionality criteria	Sub-criteria	Sub-criteria points	Maximum number of points
<b>T2.2-02 Previous Experience</b>  Experience with doing similar job attached proof details, together with returnable tender documents	No information submitted to evaluate	0	<b>40</b>
	Bidder has completed one related Refurbishment of Transformer projects as per required scope. Submission of projects not related to services required.	20	
	Bidder has completed two related Refurbishment of Transformer projects as per required scope. Submission of projects not related to services required	40	
	Bidder has completed 3 related Refurbishment of Transformer projects as per required scope. Submission of projects not related to services required.	60	
	Bidder has completed 4 related Refurbishment of Transformer projects	80	

	as per required scope. Submission of projects not related to services required	100	
	Bidder has completed 5 or more related Refurbishment of Transformer projects as per required scope. Submission of projects not related to services required.		
<p><b>T2.2-03 Project Management Organogram, Management &amp; CVs of Key persons:</b></p> <p>Bidder to provide (together with tender documents) a clear Organogram indicating key team members and specialists, accompanied by their CVs indicating qualifications, relevant experience.</p>	Score 0 (No response 0%) - Bidder has not submitted an Organogram with key personnel or no CV'S of proof of experience.	0	<b>30</b>
	Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate ,With 0-1 years' experience with relevant qualifications.	20	
	Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power With 0-1 years' experience with relevant qualifications. OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate, With 1-2 years' experience with relevant qualifications.	40	
	Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power With 1-2 years' experience with relevant qualifications. OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate, With 2-3 years' experience with relevant qualifications.	60	
		80	

	<p>Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power With 2-3 years' experience with relevant qualifications. OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate ,With 3-4 years' experience with relevant qualifications.</p> <p>Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power With 3-4 years' experience with relevant qualifications. OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate, With 4-5 years' experience with relevant qualifications.</p>	100	
<b>T2.2-04 Method Statement</b>	<p>Bidder has attached method statement with timeline to complete project within 9 weeks of being awarded contract.</p> <p>Bidder has attached method statement with timeline to complete project within 8 weeks of being awarded contract.</p> <p>Bidder has attached method statement with timeline to complete project within 7 weeks of being awarded contract.</p> <p>Bidder has attached method statement with timeline to complete project within 6 weeks of being awarded contract</p> <p>Bidder has attached method statement with timeline to complete project within 6 weeks of being awarded contract.</p> <p>Bidder has attached method statement with timeline to complete project within 5 weeks or less of being awarded contract.</p>	0 20 40 60 80 100	<b>20</b>

<b>T2.2-05 Health and Safety Management</b>	No information submitted to evaluate	0	<b>10</b>
	Roles and responsibilities do not meet the Occupational health and safety Act as per construction regulations and Transnet health and safety specification.	20	
	Roles and responsibilities are unlikely to ensure compliance as per the Works information and not in line with OHS Act and Transnet health and safety specification.	40	
	Satisfactory response on roles and responsibilities as per Employer's requirements.	60	
	Roles and responsibilities are likely to ensure compliance as per Works Information, OHS Act and Transnet health and safety specification.	80	
	Roles and Responsibilities most likely to ensure compliance as per requirements of OHS Act and Transnet Health and Safety Management Specification and CV and proof of professional registration with SACPCMP submitted.	100	
<b>Maximum possible score for Functionality</b>			<b>100</b>

Functionality shall be scored independently by not less than 3 (three) evaluators and averaged in accordance with the following schedules:

- T2.2-02 Previous Experience
- T2.2-03 Project Organogram, Management & CVs of Key Persons
- T2.2-04 Method statement
- T2.2-05 Health and Safety Management

Each evaluation criteria will be assessed in terms of scores of 0, 20, 40, 60, 80 or 100.

The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. (See CIDB Inform Practice Note #9).

**Note: Any tender not complying with the above mentioned requirements, will be regarded as non-responsive and will therefore not be considered for further evaluation. This note must be read in conjunction with Clause C.2.1.**

C.3.12. Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the 80/20 preference points systems as described in the Transnet Preferential Procurement Policy.

80 where the financial value of one or more responsive tenders received have a value equal to or below R50 million, inclusive of all applicable taxes,

Thresholds	Minimum Threshold
Technical / functionality	60

Evaluation Criteria	Final Weighted Scores
Price	80
Specific goals - Scorecard	20
<b>TOTAL SCORE:</b>	<b>100</b>

Up to 100 minus  $W_1$  tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed. **Should the evidence required for any of the Specific Goals applicable in this tender not be provided, a tenderer will score zero preference points for that particular "Specific Goal".**

In terms of Transnet Preferential Procurement Policy (TPPP) and Procurement Manuals, the following preference points must be awarded to a bidder who provides the relevant required evidence for claiming points

Selected Specific Goal	Number of points allocated (80/20)
B-BBEE Level of contributor – Level 1& 2	6,67
+50% Black Youth Owned Entities	6,67
30% Black women Owned entities	6,67
Non-Compliant and/or B-BBEE Level 3-8 contributors	0

Specific Goals	Acceptable Evidence
B-BBEE	B-BBEE Certificate / Sworn-Affidavit B-BBEE Certificate (in case of JV, a consolidate scorecard will be accept) as per DTIC guidelines
30% Black Women Owned Entities	B-BBEE Certificate / Sworn-Affidavit / CIPC B-BBEE Certificate (in case of JV, a consolidate scorecard will be accept) as per DTIC guidelines
50% Black Youth Owned Entities	Certified copy of ID Documents of the Owners and B-BBEE Certificate / Affidavit (in case of JV, a consolidate scorecard will be accept)

**The following Table represents the evidence to be submitted for claiming preference points for applicable specific goals in a particular tender:**

The maximum points for this bid are allocated as follows:

DISCRIPTION	POINTS
PRICE	<b>80</b>
B-BBEE STATUS LEVEL OF CONTRIBUTION <ul style="list-style-type: none"> <li> B-BBEE Level of contributor – Level 1&amp; 2</li> <li> 30% Black Women Owned Entities</li> <li> +50% Black Youth Owned Entities</li> </ul>	<b>20</b>
Total points for Price and Specific Goals must not exceed	<b>100</b>

**Note:** Transnet reserves the right to carry out an independent audit of the tenderers scorecard components at any stage from the date of close of the tenders until completion of the contract.

**C.3.13** Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
2. the tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;
3. the tenderer has fully and properly completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.
4. Transnet reserves the right to award the tender to the tenderer who scores the highest number of points overall, unless there are **objective criteria**

which will justify the award of the tender to another tenderer. Objective criteria include but are not limited to the outcome of a due diligence exercise to be conducted. The due diligence exercise may take the following factors into account inter alia;

the tenderer:

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) is not undergoing a process of being restricted by Transnet or other state institution that Transnet may be aware of,
- c) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- d) has the legal capacity to enter into the contract,
- e) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- f) complies with the legal requirements, if any, stated in the tender data and
- g) is able, in the option of the employer to perform the contract free of conflicts of interest.

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C.3.17 The number of paper copies of the signed contract to be provided by the Employer is 1 (one).

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## **T2.1 List of Returnable Documents**

### **2.1.1 These schedules are required for eligibility purposes:**

T2.2-01 **Stage One as per CIDB: Eligibility Criteria Schedule** - CIDB Registration

### **2.1.2 Stage Two as per CIDB: these schedules will be utilised for Functionality evaluation purposes:**

T2.2-02 **Evaluation Schedule:** Previous experience

T2.2-03 **Evaluation Schedule:** Project Organogram, Management & CV's

T2.2-04 **Evaluation Schedule:** Method Statement

T2.2-05 **Evaluation Schedule:** Health and Safety Management

### **2.1.3 Returnable Schedules:**

#### **General:**

T2.2-06 Certificate of Attendance of Non Compulsory Briefing Meeting

T2.2-07 Authority to submit tender

T2.2-08 Record of addenda to tender documents

T2.2-09 Letter of Good Standing

T2.2-10 Risk Elements

T2.2-11 Availability of equipment and other resources

T2.2-12 Schedule of proposed Subcontractors (if subcontract in terms of TPPP is not eligibility)

T2.2-13 Affected Property Establishment requirements

- 📄 Valid proof of Respondent's compliance to B-BBEE requirements stipulated in SBD6 on ANNEX G Compulsory Enterprise Questionnaire

#### **Agreement and Commitment by Tenderer:**

T2.2-14: CIDB SFU ANNEX G Compulsory Enterprise Questionnaire

T2.2-15 Non-Disclosure Agreement

T2.2-16 RFP Declaration Form

T2.2-17 RFP – Breach of Law

T2.2-18 Certificate of Acquaintance with Tender Document

T2.2-19 Service Provider Integrity Pact

T2.2-20 Supplier Code of Conduct

T2.2-21 Agreement in terms of Protection of Personal Information Act (POPIA)

**1.3.2 Bonds/Guarantees/Financial/Insurance:**

T2.2-22 Insurance provided by the Contractor

**2.2 C1.1 Offer portion of Form of Offer & Acceptance**

**2.3 C1.2 Contract Data Part Two (Data by Contractor)**

**2.5 C2.1 Pricing Instructions (Bill of Quantities)**

**2.6 C2.2 Price List**

## T2.2-03: Eligibility Criteria Schedule - CIDB Grading

### Designation

#### Note to tenderers:

Tenderers are to indicate their CIDB Grading by filling in the table below. **Attach a copy of the CIDB Grading Designation or evidence of being capable of being so registered.**

CRS Number	Status	Grading	Expiry Date

- Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **3 EP** class of construction works, are eligible to have their tenders evaluated.

#### 2. Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

- every member of the joint venture is registered with the CIDB;
- the lead partner has a contractor grading designation of not lower than one level below the required class of construction works under consideration and possesses the required recognition status; and
- the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **3 EP** class of construction works or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations
- the Contractor shall provide the employer with a certified copy of its signed joint venture agreement;
- and in the event that the joint venture is an 'Incorporated Joint Venture' the Memorandum of Incorporation to be provided within 4 (four) weeks of the Contract Date.

## T2.2-02: Evaluation Schedule: Previous Experience

### Note to tenderers:

Tenderers are required to demonstrate performance in comparable projects of similar size and nature by supplying the following:

- A list of past / current comparable projects.
- Construction of similar Service as detailed in the Service Information with reference to:
  - Electrical works as per scope of Service as per this request
- Sufficient references to substantiate experience indicated (Client name and contact details, project description, duration and contract value)

### Index of documentation attached to this schedule

	DOCUMENT NAME
1	
2	
3	
4	
5	
6	
7	

Score	Previous Experience	Weight: Maximum 40
0	The Tenderer failed to address the question / issue. Has not submitted the required information.	
20	The Tenderer's previous experience presented has no relevance to the scope of this project and did not address any of the required categories. Tenderers generally have experience in <b>one (1)</b> project relating to the scope of works.  The tenderer has limited or poor evidence of previous experience.	
40	The Tenderer's previous experience presented has some relevance to the project but lacks detail i.e. Description of previous projects, value and references. Tenderers generally have experience in <b>two (2)</b> projects relating to scope of <i>works</i> .	

	The tenderer lacks convincing evidence of knowledge of previous experience, specific to the <i>works</i> .
<b>60</b>	The Tenderer's previous experience presented demonstrates sufficient knowledge and experience to successfully execute this project scope. Tenderers generally have experience in <b>three (3)</b> projects relating to the scope of works. The tenderer has reasonable and relevant previous experience to the particular requirements of the <i>works</i> .
<b>80</b>	The Tenderer's previous experience presented demonstrates a real understanding and substantial evidence of the ability meet the stated project requirements. Tenderers generally have experience in <b>four (4)</b> projects relating to the scope of works. The tenderer has extensive previous experience in relation to the <i>works</i> .
<b>100</b>	The Tenderer's previous experience presented demonstrates real confidence extensive understanding in all of the categories as required. Tenderers generally have experience in <b>more than four (4)</b> projects relating to the scope of works. The tenderer has comprehensive previous experience in projects of a similar nature.

**Only relevant and sufficient references to substantiate experience indicated (Client name and contact details, project description, duration and contract value) will be expected**

## T2.2-03: Evaluation Schedule: Project Organogram, Management & CV's

Submit the following documents as a minimum with your tender document:

1. A comprehensive and detailed **organogram** that shows the structure and composition of their management structure involved in the *works*, inclusive of the key staff/professionals, identified in the Contract Data Part two.
2. Detailed CV's providing the following:
  - The roles and responsibilities for the *works* of each resource should be clearly stated.
  - Detailed experience in this specific construction activity and positions held, such as recent assignments inclusive of total duration that has a bearing on the scope of work.
  - The education, training (*inter alia* NEC3) and skills of the assigned staff in the specific sector, field, subject, etc. which is directly linked to the *works*. Qualifications (degrees, diplomas, grades) and membership of professional societies and relevant professional registrations to be attached.
  - Site Management resources should include at least, amongst others:
    - Project Manager
      - Project Manager should at least have a relevant qualification and must have experience in the Civil/Electrical/Mechanical/Building Construction Projects. The Project/Contracts Manager must have experience working with the NEC3 Engineering and Construction Contract.
    - Quality Officer
      - Quality officer should have a have a relevant qualification and experience on a project of a similar nature.
    - Health & Safety Manager

- Health and Safety Manager should have valid professional registration with SACPCMP as a Construction Health and Safety Manager.

 Health & Safety Officer

- ⌘ Health & Safety Officer should have valid professional registration with SACPCMP as a Construction Health & Safety Officer.

 Environmental Officer

- Environmental Officer should have a have a relevant qualification and experience on a project of a similar nature.

The following table is to be populated by the tenderer identifying the resources for the key roles for the *works*. Attached submissions to this returnable.

<b>Key Person Role</b>	<b>Name of Resource</b>
Project Manager	
Quality Officer	
Health and Safety Manager	
Health and Safety Officer	
Environmental Officer	

The scoring of the Project Organogram, Management & CV's will be as follows:

<b>Weight</b>  <b>30%</b>	<b>Knowledge of issues pertinent to the project for the following:</b>  <b>NB:</b> Weightings are as per general experience and qualifications sub-criterion
<b>Points</b>	
(score 0)	(No response ) - Bidder has not submitted an Organogram with key personnel or no CV'S of proof of experience.
(score 40)	Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate ,With 0-1 years' experience with relevant qualifications.
(score 60)	Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power With 0-1 years' experience with relevant qualifications. OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate, With 1-2 years' experience with relevant qualifications.
(score 80)	Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power With 1-2 years' experience with relevant qualifications. OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate, With 2-3 years' experience with relevant qualifications.
(score 100)	Bidder has submitted an Organogram and CV's of key personnel Key personnel including: National Diploma in Electrical Engineering Heavy Current/Power With 3-4 years' experience with relevant qualifications. OR / AND N6 in Electrical Engineering Heavy Current/Power Certificate, With 4-5 years' experience with relevant qualifications.

## T2.2-04: Evaluation Schedule: Method Statement

### Note to tenderers:

Method statement - The tenderers must sufficiently demonstrate the

approach/methodology that will be employed to cover the scope of the project.

- A detailed method statement is required for the **Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South**

In addition to general methodology for the project, the tenderer must demonstrate the following aspects but not limited to:

- Order and timing of the audits, inspection and design milestones that will take place in order to provide the *Service*.
- Indication of how the above will be achieved in terms of the associated policies and procedures, and relevant specification described in the tender.

**Please note: Tenderers are required to provide detailed method statements for the categories as listed above. Each sub-category as listed will be scored based on the linear scale below, and will be averaged and weighed to provide a final score. Tenderers to note that they will not achieve an “acceptable” score should they not provide the information as required in this Returnable.**

The table below will be used as guidelines for scoring / evaluating the method statement submitted by the Tenderer:

### Weight: Maximum 10 Points

<b>Score 0</b>	The tenderer has submitted no information or inadequate information to determine a score.
<b>Score 20</b>	The methodology/approach and work alignment to project schedule is poorly presented, generic and not tailored to address the specific project objectives and methodology.
<b>Score 40</b>	The methodology/approach is generic and not tailored to address the specific project objectives and methodology. The methodology approach does not adequately deal with the critical characteristics of the project.
<b>Score 60</b>	Satisfactory response/solution to the particular aspect of the requirement and evidence given that the stated employer’s requirements will be met.
<b>Score 80</b>	The methodology/approach is specifically tailored to address the specific project objectives and methodology and is sufficiently flexible to accommodate changes that may occur during execution. The methodology/approach to manage activities is specifically tailored to the critical characteristics of the project.
<b>Score 100</b>	Besides meeting the “80” rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has outstanding knowledge of state-of-the-art approaches. The methodology approach details ways to improve the project outcomes and the quality of the outputs.

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## **T2.2-05: Evaluation Schedule: Health and Safety Management**

The tenderer must submit the following documents as a minimum with the tender submission:

1. Contract specific Health & Safety plan including the following:
  - a. Roles and responsibilities of legal appointees in terms of OHS Act 85 of 1993 and its Regulations.
    - i. S16.1 CEO,
    - ii. CR8.1 Construction manager,
    - iii. CR8.5 Construction Health & Safety officer,
    - iv. CR8.7 Construction Supervisor,
    - v. CR9.1 Risk Assessor
  - b. Valid Letter/s of Good Standing with the Workmen's compensation fund (Letters of Good Standing from all members of a newly formed JV).
  - c. Overview of Tenderer's SHE system for project
2. Overview of the tenderer's Risk Assessment methodology, and submission of risk assessments indicating major activities of the works and how the risks will be addressed and mitigated.
3. Synopsis of Health & Safety incidents, description, type and action taken to prevent re-occurrence and submission of completed cost breakdown sheet within the last five years.



The scoring of the Tender’s Health and Safety criteria is as follows:

	<b>Roles &amp; Responsibilities, such as S16.1 CEO, CR 8.1 Construction manager, CR 8.5 Health and Safety officer CV and proof registration with SACPCMP, CR 8.7 Construction Supervisor, CR 9.1 Risk Assessor as per the Occupational health and safety Act 85 of 1993</b>
<b>Points</b>	<b>Weight: Maximum 10</b>
<b>(score 0)</b>	The tenderer has submitted no information or inadequate information to determine a score.
<b>(score 20)</b>	Roles and responsibilities do not meet the Occupational health and safety Act as per construction regulations and Transnet health and safety specification.
<b>(score 40)</b>	Roles and responsibilities are unlikely to ensure compliance as per the Works information and not in line with OHS Act and Transnet health and safety specification.
<b>(score 60)</b>	Satisfactory response on roles and responsibilities as per Employer’s requirements.
<b>(score 80)</b>	Roles and responsibilities are likely to ensure compliance as per Works Information, OHS Act and Transnet health and safety specification.
<b>(score 100)</b>	Roles and Responsibilities most likely to ensure compliance as per requirements of OHS Act and Transnet Health and Safety Management Specification and CV and proof of professional registration with SACPCMP submitted.

**Attached submissions to this schedule:**

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## T2.2-06: Eligibility Criteria Schedule:

### Certificate of Attendance at Tender Clarification Meeting

This is to certify that

.....  
(Company Name)

Represented by: .....  
(Name and Surname)

Was represented at the non compulsory tender clarification meeting

Held at:	<b>Beaconsfield, Transnet Property Building , Boardroom, 1 Austen Street, Kimberley</b>	
On (date)	<b>21 September 2023</b>	Starting time: 10:00 AM

#### Particulars of person(s) attending the meeting:

Name ..... Signature .....

Capacity .....

#### Attendance of the above company at the meeting was confirmed:

Name ..... Signature .....

**For and on Behalf of the Employers Agent.** ..... Date .....

## T2.2-07: Authority to submit a Tender

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

<b>A - COMPANY</b>	<b>B - PARTNERSHIP</b>	<b>C - JOINT VENTURE</b>	<b>D - SOLE PROPRIETOR</b>

### A. Certificate for Company

I, \_\_\_\_\_ chairperson of the board of directors \_\_\_\_\_, hereby confirm that by resolution of the board taken on \_\_\_\_\_ (date), Mr/Ms \_\_\_\_\_, acting in the capacity of \_\_\_\_\_, was authorised to sign all documents in connection with this tender offer and any contract resulting from it on behalf of the company.

Signed

Date

Name

Position

Chairman of the Board of Directors

## B. Certificate for Partnership

We, the undersigned, being the **key partners** in the business trading as

\_\_\_\_\_ hereby authorise Mr/Ms \_\_\_\_\_

\_\_\_\_\_ acting in the capacity of \_\_\_\_\_, to sign all

documents in connection with the tender offer for Contract \_\_\_\_\_

\_\_\_\_\_ and any contract resulting from it on our behalf.

Name	Address	Signature	Date

**NOTE:** This certificate is to be completed and signed by the full number of Partners necessary to commit the Partnership. Attach additional pages if more space is required.

### C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms \_\_\_\_\_, an authorised signatory of the company \_\_\_\_\_, acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract \_\_\_\_\_ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

<b>Name of firm</b>	<b>Address</b>	<b>Authorising signature, name (in caps) and capacity</b>



**D. Certificate for Sole Proprietor**

I, \_\_\_\_\_, hereby confirm that I am the sole owner of the business trading as \_\_\_\_\_

\_\_\_\_\_.

Signed

Date

Name

Position

Sole Proprietor

## **T2.2-08: Record of Addenda to Tender Documents**

This schedule as submitted confirms that the following communications received from the *Employer* before the submission of this tender offer, amending the tender documents, have been taken into account in this specific tender offer:

	<b>Date</b>	<b>Title or Details</b>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		









## T2.2-12: Proposed Sub-Contractors

**Tenderer to note that if successful, any deviations from the list of proposed sub-contractors in the contract phase will be subject to acceptance by the *Service Manager* in terms of the Conditions of Contract. Please also note the applicable Z clauses in Contract Data by *Employer*.**

Provide **detailed information** of the proposed Sub-contractors below:

	<b>Name of proposed Sub-contractor</b>	<b>Proposed Sub-contractor National Treasury Central Supplier Database Registration Number Address and Region</b>	<b>Nature and extent of work</b>	<b>B-BBEEE Certificates or Sworn Affidavit attached behind this schedule? Yes/No</b>	<b>Percentage (%) of the sub-contracted works in terms of the tendered total of the prices.</b>
1.					
2.					
3.					
4.					
5.					
6.					



7.					
8.					
9.					
10.					



## T2.2-14: ANNEX G Compulsory Enterprise Questionnaire

The following particulars hereunder must be furnished.

In the case of a Joint Venture, separate enterprise questionnaires in respect of each partner/member must be completed and submitted.

**Section 1: Name of enterprise:** \_\_\_\_\_

**Section 2: VAT registration number, if any:** \_\_\_\_\_

**Section 3: CIDB registration number, if any:** \_\_\_\_\_

**Section 4: CSD number:** \_\_\_\_\_

**Section 5: Particulars of sole proprietors and partners in partnerships**

Name	Identity number	Personal income tax number

\* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

**Section 6: Particulars of companies and close corporations**

Company registration number \_\_\_\_\_

Close corporation number \_\_\_\_\_

Tax reference number: \_\_\_\_\_

**Section 7: The attached SBD4 must be completed for each tender and be attached as a tender requirement.**

**Section 8: The attached SBD 6 must be completed for each tender and be attached as a requirement.**

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed	Date
Name	Position
Enterprise name	

## SBD 6.1

### PREFERENCE POINTS CLAIM FORM

This preference form must form part of all bids invited. It contains general information and serves as a claim for preference points for Specific Goals contribution. Transnet will award preference points to companies who provide valid proof of evidence as per the table of evidence in paragraph 4.1 below.

#### 1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the 80 / 20 preference point system shall be applicable. Despite the stipulated preference point system, Transnet shall use the lowest acceptable bid to determine the applicable preference point system in a situation where all received acceptable bids are received outside the stated preference point system.

1.3 Preference points for this bid shall be awarded for:

- (a) Price;
- (b) B-BBEE Status Level of Contribution; and
- (c) Any other specific goal determined in the Transnet preferential procurement policy

1.4 The maximum points for this bid are allocated as follows:

	POINTS
<b>PRICE</b>	<b>80</b>
<input type="checkbox"/> B-BBEE STATUS LEVEL OF CONTRIBUTION Level 1 & 2 <input type="checkbox"/> 30% Black Women Owned Entities <input type="checkbox"/> +50% Black Youth Owned Entities	<b>20</b>
<b>Total points for Price and B-BBEE must not exceed</b>	<b>100</b>

1.5 Failure on the part of a bidder to submit proof of evidence required for any of the specific goals together with the bid will be interpreted to mean that preference points for that specific goal are not claimed.

1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

## 2. DEFINITIONS

- (a) **“all applicable taxes”** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (c) **“B-BBEE status level of contributor”** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (d) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the supply/provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (f) **“EME”** means an Exempted Micro Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (g) **“functionality”** means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents
- (h) **“Price”** includes all applicable taxes less all unconditional discounts.
- (i) **“Proof of B-BBEE Status Level of Contributor”**
  - i) the B-BBEE status level certificate issued by an authorised body or person;
  - ii) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
  - iii) any other requirement prescribed in terms of the B-BBEE Act.
- (j) **“QSE”** means a Qualifying Small Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 ( Act No. 53 of 2003);
- (k) **“rand value”** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties.
- (l) **“Specific goals”** means targeted advancement areas or categories of

persons or groups either previously disadvantaged or falling within the scope of the Reconstruction and Development Programme identified by Transnet to be given preference in allocation of procurement contracts in line with section 2(1) of the PPPFA.

### 3. POINTS AWARDED FOR PRICE

#### 3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:  
80/20

$$P_s = 80 \times \frac{P_t - P_{\min}}{P_{\min}}$$

Where

$P_s$  = Points scored for comparative price of bid under consideration

$P_t$  = Comparative price of bid under consideration

$P_{\min}$  = Comparative price of lowest acceptable bid

### 4. EVIDENCE REQUIRED FOR CLAIMING SPECIFIC GOALS

4.1 In terms of Transnet Preferential Procurement Policy (TPPP) and Procurement Manuals, preference points must be awarded to a bidder for providing evidence in accordance with the table below:

Specific Goals	Acceptable Evidence
B-BBEE Status contributor	B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline
30% Black Women Owned Entities	B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline
+50% Black Youth Owned Entities	Certified copy of ID Documents of the Owners and B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline

4.2 The table below indicates the required proof of B-BBEE status depending on the category of enterprises:

Enterprise	B-BBEE Certificate & Sworn Affidavit
Large	Certificate issued by SANAS accredited verification agency
QSE	Certificate issued by SANAS accredited verification agency Sworn Affidavit signed by the authorised QSE representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership (only black-owned QSEs - 51% to 100% Black owned)

	[Sworn affidavits must substantially comply with the format that can be obtained on the DTI's website at <a href="http://www.dti.gov.za/economic_empowerment/bee_codes.jsp">www.dti.gov.za/economic_empowerment/bee_codes.jsp</a> .]
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<b>EME</b>	Sworn Affidavit signed by the authorised EME representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership Certificate issued by CIPC (formerly CIPRO) confirming annual turnover and black ownership Certificate issued by SANAS accredited verification agency only if the EME is being measured on the QSE scorecard
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- 4.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level verification certificate for every separate bid.
- 4.4 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
- 4.5 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.
- 4.6 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.
- 4.7 Bidders are to note that the rules pertaining to B-BBEE verification and other B-BBEE requirements may be changed from time to time by regulatory bodies such as National Treasury or the DTI. It is the Bidder's responsibility to ensure that his/her bid complies fully with all B-BBEE requirements at the time of the submission of the bid.

## 5. BID DECLARATION

- 5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

## 6. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 6.1

- 6.1 B-BBEE Status Level of Contribution: . = .....(maximum of 20 points)  
(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.



8.4 TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture / Consortium
- One person business/sole propriety
- Close corporation
- Company
- (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....  
.....  
.....

8.6 COMPANY CLASSIFICATION

- Manufacturer
- Supplier
- Professional Service provider
- Other Service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If a bidder submitted false information regarding its B-BBEE status level of contributor,, which will affect or has affected the evaluation of a bid, or where a bidder has failed to declare any subcontracting arrangements or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have
  - (a) disqualify the person from the bidding process;
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable

- arrangements due to such cancellation;
- (d) if the successful bidder subcontracted a portion of the bid to another person without disclosing it, Transnet reserves the right to penalise the bidder up to 10 percent of the value of the contract;
  - (e) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
  - (f) forward the matter for criminal prosecution.

<p>WITNESSES</p> <p>1. ....</p> <p>2. ....</p>
--

<p>.....</p> <p>SIGNATURE(S) OF BIDDERS(S)</p> <p>DATE: .....</p> <p>ADDRESS .....</p> <p>.....</p> <p>.....</p>
--

### BIDDER'S DISCLOSURE

#### 1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

#### 2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners

or any person having a controlling interest<sup>1</sup> in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of institution	State

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:  
 .....  
 .....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:  
 .....  
 .....

**3 DECLARATION**

I, \_\_\_\_\_ the \_\_\_\_\_ undersigned,

<sup>1</sup> the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

(name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium<sup>2</sup> will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

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<sup>2</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.



..... Signature	..... Date
..... Position	..... Name of bidder



## **T2.2-15 NON-DISCLOSURE AGREEMENT**

### **[November 2022]**



**Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:**

**THIS AGREEMENT** is made effective as of ..... day of ..... 20..... by and between:

**TRANSNET SOC LTD**

(Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Transnet Corporate Centre 138 Eloff Street , Braamfontein , Johannesburg 2000

**and**

.....  
.....

(Registration No. ....), a private company incorporated and existing under the laws of South Africa having its principal place of business at

.....  
.....  
.....  
.....

**WHEREAS**

Transnet and the Company wish to exchange Information [as defined below] and it is envisaged that each party may from time to time receive Information relating to the other in respect thereof. In consideration of each party making available to the other such Information, the parties jointly agree that any dealings between them shall be subject to the terms and conditions of this Agreement which themselves will be subject to the parameters of the Tender Document.

**IT IS HEREBY AGREED**

**1. INTERPRETATION**

In this Agreement:

- 1.1 **Agents** mean directors, officers, employees, agents, professional advisers, contractors or sub-contractors, or any Group member;
- 1.2 **Bid or Bid Document** (hereinafter Tender) means Transnet’s Request for Information [**RFI**] Request for Proposal [**RFP**] or Request for Quotation [**RFQ**], as the case may be;
- 1.3 **Confidential Information** means any information or other data relating to one party [the **Disclosing Party**] and/or the business carried on or proposed or intended to be carried on by that party and which is made available for the purposes of the Bid to the other party [the **Receiving Party**] or its Agents by the Disclosing Party or its Agents or recorded in agreed minutes following oral disclosure and any other information otherwise made available by the Disclosing Party or its Agents to the Receiving Party or its Agents, whether before, on or after the date of this Agreement, and whether in writing or otherwise, including any information,

analysis or specifications derived from, containing or reflecting such information but excluding information which:

- 1.3.1 is publicly available at the time of its disclosure or becomes publicly available [other than as a result of disclosure by the Receiving Party or any of its Agents contrary to the terms of this Agreement]; or
- 1.3.2 was lawfully in the possession of the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] free of any restriction as to its use or disclosure prior to its being so disclosed; or
- 1.3.3 following such disclosure, becomes available to the Receiving Party or its Agents [as can be demonstrated by its written records or other reasonable evidence] from a source other than the Disclosing Party or its Agents, which source is not bound by any duty of confidentiality owed, directly or indirectly, to the Disclosing Party in relation to such information;
- 1.4 **Group** means any subsidiary, any holding company and any subsidiary of any holding company of either party; and
- 1.5 **Information** means all information in whatever form including, without limitation, any information relating to systems, operations, plans, intentions, market opportunities, know-how, trade secrets and business affairs whether in writing, conveyed orally or by machine-readable medium.

## 2. CONFIDENTIAL INFORMATION

- 2.1 All Confidential Information given by one party to this Agreement [the **Disclosing Party**] to the other party [the **Receiving Party**] will be treated by the Receiving Party as secret and confidential and will not, without the Disclosing Party's written consent, directly or indirectly communicate or disclose [whether in writing or orally or in any other manner] Confidential Information to any other person other than in accordance with the terms of this Agreement.
- 2.2 The Receiving Party will only use the Confidential Information for the sole purpose of technical and commercial discussions between the parties in relation to the Tender or for the subsequent performance of any contract between the parties in relation to the Tender.
- 2.3 Notwithstanding clause 2.1 above, the Receiving Party may disclose Confidential Information:
  - 2.3.1 to those of its Agents who strictly need to know the Confidential Information for the sole purpose set out in clause 2.2 above, provided that the Receiving Party shall ensure that such Agents are made aware prior to the disclosure of any part of the Confidential Information that the same is confidential and that they owe a duty of confidence to the Disclosing Party. The Receiving Party shall at all times remain liable for any actions of such Agents that would constitute a breach of this Agreement; or
  - 2.3.2 to the extent required by law or the rules of any applicable regulatory authority, subject to clause 2.4 below.
- 2.4 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause 2.3.2 above, it shall promptly notify the Disclosing Party and

cooperate with the Disclosing Party regarding the form, nature, content and purpose of such disclosure or any action which the Disclosing Party may reasonably take to challenge the validity of such requirement.

- 2.5 In the event that any Confidential Information shall be copied, disclosed or used otherwise than as permitted under this Agreement then, upon becoming aware of the same, without prejudice to any rights or remedies of the Disclosing Party, the Receiving Party shall as soon as practicable notify the Disclosing Party of such event and if requested take such steps [including the institution of legal proceedings] as shall be necessary to remedy [if capable of remedy] the default and/or to prevent further unauthorised copying, disclosure or use.
- 2.6 All Confidential Information shall remain the property of the Disclosing Party and its disclosure shall not confer on the Receiving Party any rights, including intellectual property rights over the Confidential Information whatsoever, beyond those contained in this Agreement.

### **3. RECORDS AND RETURN OF INFORMATION**

- 3.1 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.
- 3.2 The Receiving Party shall keep a written record, to be supplied to the Disclosing Party upon request, of the Confidential Information provided and any copies made thereof and, so far as is reasonably practicable, of the location of such Confidential Information and any copies thereof.
- 3.3 The Company shall, within 7 [seven] days of receipt of a written demand from Transnet:
- 3.3.1 return all written Confidential Information [including all copies]; and
- 3.3.2 expunge or destroy any Confidential Information from any computer, word processor or other device whatsoever into which it was copied, read or programmed by the Company or on its behalf.
- 3.4 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause 3.3.2 above.

### **4. ANNOUNCEMENTS**

- 4.1 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Tender without the prior written consent of the other party.
- 4.2 Neither party shall make use of the other party's name or any information acquired through its dealings with the other party for publicity or marketing purposes without the prior written consent of the other party.

### **5. DURATION**

The obligations of each party and its Agents under this Agreement shall survive the termination of any discussions or negotiations between the parties regarding the Tender and continue thereafter for a period of 5 [five] years.

### **6. PRINCIPAL**

Each party confirms that it is acting as principal and not as nominee, agent or broker for any other person and that it will be responsible for any costs incurred by it or its advisers in considering or pursuing the Tender and in complying with the terms of this Agreement.

**7. ADEQUACY OF DAMAGES**

Nothing contained in this Agreement shall be construed as prohibiting the Disclosing Party from pursuing any other remedies available to it, either at law or in equity, for any such threatened or actual breach of this Agreement, including specific performance, recovery of damages or otherwise.

**8. PRIVACY AND DATA PROTECTION**

8.1 The Receiving Party undertakes to comply with South Africa’s general privacy protection in terms Section 14 of the Bill of Rights in connection with this Tender and shall procure that its personnel shall observe the provisions of such Act [as applicable] or any amendments and re-enactments thereof and any regulations made pursuant thereto.

8.2 The Receiving Party warrants that it and its Agents have the appropriate technical and organisational measures in place against unauthorised or unlawful processing of data relating to the Tender and against accidental loss or destruction of, or damage to such data held or processed by them.

**9. GENERAL**

9.1 Neither party may assign the benefit of this Agreement, or any interest hereunder, except with the prior written consent of the other, save that Transnet may assign this Agreement at any time to any member of the Transnet Group.

9.2 No failure or delay in exercising any right, power or privilege under this Agreement will operate as a waiver of it, nor will any single or partial exercise of it preclude any further exercise or the exercise of any right, power or privilege under this Agreement or otherwise.

9.3 The provisions of this Agreement shall be severable in the event that any of its provisions are held by a court of competent jurisdiction or other applicable authority to be invalid, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.

9.4 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.

9.5 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.

9.6 This Agreement will be governed by and construed in accordance with South African law and the parties irrevocably submit to the exclusive jurisdiction of the South African courts.

Signed	_____	Date	_____
Name	_____	Position	_____
Tenderer	_____		

Transnet Freight Rail

Tender Number: WRAC/KBC/39341 [TFR/2023/08/0013/38702/RFQ]

Description of the Service: **Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South**





## T2.2-18: RFP DECLARATION FORM

NAME OF COMPANY: \_\_\_\_\_

We \_\_\_\_\_ do hereby certify that:

1. Transnet has supplied and we have received appropriate tender offers to any/all questions (as applicable) which were submitted by ourselves for tender clarification purposes;
2. we have received all information we deemed necessary for the completion of this Tender;
3. at no stage have we received additional information relating to the subject matter of this tender from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the tender documents;
4. we are satisfied, insofar as our company is concerned, that the processes and procedures adopted by Transnet in issuing this tender and the requirements requested from tenderers in responding to this tender have been conducted in a fair and transparent manner; and
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below: *[Respondent to indicate if this section is not applicable]*

FULL NAME OF OWNER/MEMBER/DIRECTOR/

PARTNER/SHAREHOLDER:

ADDRESS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Indicate nature of relationship with Transnet:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Description of the Service: **Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South**

*[Failure to furnish complete and accurate information in this regard may lead to the disqualification of your response and may preclude a Respondent from doing future business with Transnet]*

We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet (other than any existing and appropriate business relationship with Transnet) which could unfairly advantage our company in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

6. We accept that any dispute pertaining to this tender will be resolved through the Ombudsman process and will be subject to the Terms of Reference of the Ombudsman. The Ombudsman process must first be exhausted before judicial review of a decision is sought. (Refer "Important Notice to respondents" below).
7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.
8. We have acquainted ourselves and agree with the content of T2.2-21 "Service Provider Integrity Pact".

For and on behalf of ..... ..... duly authorised thereto
Name:
Signature:
Date:

### **IMPORTANT NOTICE TO TENDERERS**

Transnet has appointed a Procurement Ombudsman to investigate any material complaint in respect of tenders exceeding R5,000,000.00 (five million S.A. Rand) in value. Should a Tenderer have any material concern regarding a tender process which meets this value threshold, a complaint may be lodged with Transnet's Procurement Ombudsman for further investigation.

- It is incumbent on the Tenderer to familiarise himself/herself with the Terms of Reference for the Transnet Procurement Ombudsman, details of which are available for review at Transnet's website [www.transnet.net](http://www.transnet.net).
- An official complaint form may be downloaded from this website and submitted, together with any supporting documentation, within the prescribed period, to [procurement.ombud@transnet.net](mailto:procurement.ombud@transnet.net)
- For transactions below the R5,000,000.00 (five million S.A. Rand) threshold, a complaint may be lodged with the Chief Procurement Officer of the relevant Transnet Operating Division.
- All Tenderers should note that a complaint must be made in good faith. If a complaint is made in bad faith, Transnet reserves the right to place such a tenderer on its List of Excluded Bidders.



## T2.2 -17: REQUEST FOR PROPOSAL - BREACH OF LAW

NAME OF COMPANY: \_\_\_\_\_

I / We \_\_\_\_\_ do hereby certify that ***I/we have/have not been*** found guilty during the preceding 5 (five) years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Tenderer is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences.

*Where found guilty of such a serious breach, please disclose:*

NATURE OF BREACH:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE OF BREACH:

\_\_\_\_\_

Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any Tenderer from the tendering process, should that person or company have been found guilty of a serious breach of law, tribunal or regulatory obligation.

Signed on this \_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
SIGNATURE OF TENDER

## **T2.2-18 Certificate of Acquaintance with Tender Documents**

NAME OF TENDERING ENTITY:

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1. By signing this certificate I/we acknowledge that I/we have made myself/ourselves thoroughly familiar with, and agree with all the conditions governing this RFP. This includes those terms and conditions of the Contract, the Supplier Integrity Pact, Non-Disclosure Agreement etc. contained in any printed form stated to form part of the documents thereof, but not limited to those listed in this clause.
2. I/we furthermore agree that Transnet SOC Ltd shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any tender/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Tender, I/we understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
  - a) has been requested to submit a Tender in response to this Tender invitation;
  - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
  - c) provides the same Services as the Tenderer and/or is in the same line of business as the Tenderer
5. The Tenderer has arrived at the accompanying Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive Tendering.

6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - a) prices;
  - b) geographical area where Services will be rendered [market allocation]
  - c) methods, factors or formulas used to calculate prices;
  - d) the intention or decision to submit or not to submit, a Tender;
  - e) the submission of a tender which does not meet the specifications and conditions of the tender; or
  - f) Tendering with the intention not winning the tender.
  
7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this tender relates.
  
8. The terms of the accompanying tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening or of the awarding of the contract.
  
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to tenders and contracts, tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation. In addition, Tenderers that submit suspicious tenders may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed on this \_\_\_\_ day of \_\_\_\_\_ 20\_\_

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SIGNATURE OF TENDERER

## **T2.2-19 Service Provider Integrity Pact**

**Important Note: All potential tenderers must read this document and certify in the RFP Declaration Form that that have acquainted themselves with, and agree with the content.**

**The contract with the successful tenderer will automatically incorporate this Integrity Pact and shall be deemed as part of the final concluded contract.**

### **INTEGRITY PACT**

Between

**TRANSNET SOC LTD**

Registration Number: 1990/000900/30

("Transnet")

and

The Contractor (hereinafter referred to as the "Tenderer/Service Providers/Contractor")

## **PREAMBLE**

Transnet values full compliance with all relevant laws and regulations, ethical standards and the principles of economical use of resources, fairness and transparency in its relations with its Tenderers/Service Providers/Contractors.

In order to achieve these goals, Transnet and the Tenderer/Service Provider/Contractor hereby enter into this agreement hereinafter referred to as the "Integrity Pact" which will form part of the Tenderer's/Service Provider's/Contractor's application for registration with Transnet as a vendor.

The general purpose of this Integrity Pact is to agree on avoiding all forms of dishonesty, fraud and corruption by following a system that is fair, transparent and free from any undue influence prior to, during and subsequent to the currency of any procurement and/or reverse logistics event and any further contract to be entered into between the Parties, relating to such event.

All Tenderers/Service Providers/Contractor's will be required to sign and comply with undertakings contained in this Integrity Pact, should they want to be registered as a Transnet vendor.

## **1 OBJECTIVES**

- 1.1 Transnet and the Tenderer/Service Provider/Contractor agree to enter into this Integrity Pact, to avoid all forms of dishonesty, fraud and corruption including practices that are anti-competitive in nature, negotiations made in bad faith and under-pricing by following a system that is fair, transparent and free from any influence/unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:
  - a) Enable Transnet to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works, goods and services; and
  - b) Enable Tenderers/Service Providers/Contractors to abstain from bribing or participating in any corrupt practice in order to secure the contract.

## **2 COMMITMENTS OF TRANSNET**

Transnet commits to take all measures necessary to prevent dishonesty, fraud and corruption and to observe the following principles:

- 2.1 Transnet hereby undertakes that no employee of Transnet connected directly or indirectly with the sourcing event and ensuing contract, will demand, take a promise for or accept directly or through intermediaries any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the Tenderer, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the tendering process, Tender evaluation, contracting or implementation process related to any contract.
- 2.2 Transnet will, during the registration and tendering process treat all Tenderers/ Service Providers/Contractor with equity, transparency and

fairness. Transnet will in particular, before and during the registration process, provide to all Tenderers/ Service Providers/Contractors the same information and will not provide to any Tenderers/Service Providers/Contractors confidential/additional information through

which the Tenderers/Service Providers/Contractors could obtain an advantage in relation to any tendering process.

- 2.3 Transnet further confirms that its employees will not favour any prospective Tenderers/Service Providers/Contractors in any form that could afford an undue advantage to a particular Tenderer during the tendering stage, and will further treat all Tenderers/Service Providers/Contractors participating in the tendering process in a fair manner.
- 2.4 Transnet will exclude from the tender process such employees who have any personal interest in the Tenderers/Service Providers/Contractors participating in the tendering process.

### **3 OBLIGATIONS OF THE TENDERER / SERVICE PROVIDER**

- 3.1 Transnet has a '**Zero Gifts**' Policy. No employee is allowed to accept gifts, favours or benefits.
  - a) Transnet officials and employees **shall not** solicit, give or accept, or from agreeing to solicit, give, accept or receive directly or indirectly, any gift, gratuity, favour, entertainment, loan, or anything of monetary value, from any person or juridical entities in the course of official duties or in connection with any operation being managed by, or any transaction which may be affected by the functions of their office.
  - b) Transnet officials and employees **shall not** solicit or accept gifts of any kind, from vendors, suppliers, customers, potential employees, potential vendors, and suppliers, or any other individual or organisation irrespective of the value.
  - c) Under **no circumstances** should gifts, business courtesies or hospitality packages be accepted from or given to prospective suppliers participating in a tender process at the respective employee's Operating Division, regardless of retail value.
  - d) Gratuities, bribes or kickbacks of any kind must never be solicited, accepted or offered, either directly or indirectly. This includes money, loans, equity, special privileges, personal favours, benefit or services. Such favours will be considered to constitute corruption.
- 3.2 The Tenderer/Service Provider/Contractor commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Tender or during any ensuing contract stage in order to secure the contract or in furtherance to secure it and in particular the Tenderer/Service Provider/Contractor commits to the following:

- a) The Tenderer/Service Provider/Contractor will not, directly or through any other person or firm, offer, promise or give to Transnet or to any of Transnet's employees involved in the tendering process or to any third person any material or other benefit or payment, in order to obtain in exchange an advantage during the tendering process; and
- b) The Tenderer/Service Provider/Contractor will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement

to any employee of Transnet, connected directly or indirectly with the tendering process, or to any person, organisation or third party related to the contract in exchange for any advantage in the tendering, evaluation, contracting and implementation of the contract.

- 3.3 The Tenderer/Service Provider/Contractor will not collude with other parties interested in the contract to preclude a competitive Tender price, impair the transparency, fairness and progress of the tendering process, Tender evaluation, contracting and implementation of the contract. The Tenderer / Service Provider further commits itself to delivering against all agreed upon conditions as stipulated within the contract.
- 3.4 The Tenderer/Service Provider/Contractor will not enter into any illegal or dishonest agreement or understanding, whether formal or informal with other Tenderers/Service Providers/Contractors. This applies in particular to certifications, submissions or non-submission of documents or actions that are restrictive or to introduce cartels into the tendering process.
- 3.5 The Tenderer/Service Provider/Contractor will not commit any criminal offence under the relevant anti-corruption laws of South Africa or any other country. Furthermore, the Tenderer/Service Provider/Contractor will not use for illegitimate purposes or for restrictive purposes or personal gain, or pass on to others, any information provided by Transnet as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 3.6 A Tenderer/Service Provider/Contractor of foreign origin shall disclose the name and address of its agents or representatives in South Africa, if any, involved directly or indirectly in the registration or tendering process. Similarly, the Tenderer / Service Provider / Contractor of South African nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly in the registration or tendering process.
- 3.7 The Tenderer/Service Provider/Contractor will not misrepresent facts or furnish false or forged documents or information in order to influence the tendering process to the advantage of the Tenderer/Service Provider/Contractor or detriment of Transnet or other competitors.

- 3.8 Transnet may require the Tenderer/Service Provider/Contractor to furnish Transnet with a copy of its code of conduct. Such code of conduct must address the compliance programme for the implementation of the code of conduct and reject the use of bribes and other dishonest and unethical conduct.
- 3.9 The Tenderer/Service Provider/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 3.10 The Tenderer/Service Provider/Contractor confirms that they will uphold the ten principles of the United Nations Global Compact (UNGC) in the fields of Human Rights, Labour, Anti-Corruption and the Environment when undertaking business with Transnet as follows:
- a) Human Rights
- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
  - Principle 2: make sure that they are not complicit in human rights abuses.
- b) Labour
- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
  - Principle 4: the elimination of all forms of forced and compulsory labour;
  - Principle 5: the effective abolition of child labour; and
  - Principle 6: the elimination of discrimination in respect of employment and occupation.
- c) Environment
- Principle 7: Businesses should support a precautionary approach to environmental challenges;
  - Principle 8: undertake initiatives to promote greater environmental responsibility; and
  - Principle 9: encourage the development and diffusion of environmentally friendly technologies.
- d) Anti-Corruption
- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

#### 4 INDEPENDENT TENDERING

- 4.1 For the purposes of that Certificate in relation to any submitted Tender, the Tenderer declares to fully understand that the word “competitor” shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
- a) has been requested to submit a Tender in response to this Tender invitation;
  - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
  - c) provides the same Goods and Services as the Tenderer and/or is in the same line of business as the Tenderer.
- 4.2 The Tenderer has arrived at his submitted Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive tendering.
- 4.3 In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
- a) prices;
  - b) geographical area where Goods or Services will be rendered [market allocation];
  - c) methods, factors or formulas used to calculate prices;
  - d) the intention or decision to submit or not to submit, a Tender;
  - e) the submission of a Tender which does not meet the specifications and conditions of the RFP; or
  - f) tendering with the intention of not winning the Tender.
- 4.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Goods or Services to which his/her tender relates.
- 4.5 The terms of the Tender as submitted have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
- 4.6 Tenderers are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [**NPA**] for criminal

investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

- 4.7 Should the Tenderer find any terms or conditions stipulated in any of the relevant documents quoted in the Tender unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Tender. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be.

## **5 DISQUALIFICATION FROM TENDERING PROCESS**

- 5.1 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3 of this Integrity Pact or in any other form such as to put its reliability or credibility as a Tenderer/Service Provider/Contractor into question, Transnet may reject the Tenderer's / Service Provider's / Contractor's application from the registration or tendering process and remove the Tenderer/Service Provider/Contractor from its database, if already registered.
- 5.2 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3, or any material violation, such as to put its reliability or credibility into question. Transnet may after following due procedures and at its own discretion also

exclude the Tenderer/Service Provider /Contractor from future tendering processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, which will include amongst others the number of transgressions, the position of the transgressors within the company hierarchy of the Tenderer/Service Provider/Contractor and the amount of the damage. The exclusion will be imposed for up to a maximum of 10 (ten) years. However, Transnet reserves the right to impose a longer period of exclusion, depending on the gravity of the misconduct.

- 5.3 If the Tenderer/Service Provider/Contractor can prove that it has restored the damage caused by it and has installed a suitable corruption prevention system, or taken other remedial measures as the circumstances of the case may require, Transnet may at its own discretion revoke the exclusion or suspend the imposed penalty.

## **6 TRANSNET'S LIST OF EXCLUDED TENDERERS (BLACKLIST)**

- 6.1 The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Tender shall be awarded to a Tenderer whose name (or any of its members,

directors, partners or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Tenderer should it be established, at any time, that a tenderer has been restricted with National Treasury by another government institution.

- 6.2 All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual (CPM included) are included herein by way of reference. Below follows a condensed summary of this restriction procedure.
- 6.3 On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place the entity concerned on the Database of Restricted Suppliers published on its official website.
- 6.4 The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "*prima facie*" (i.e. on the face of it) case has been established.
- 6.5 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.
- 6.6 A Service Provider or Contractor to Transnet may not subcontract any portion of the contract to a blacklisted company.
- 6.7 Grounds for blacklisting include: If any person/Enterprise which has submitted a Tender, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Tender or contract:
  - a) Has, in bad faith, withdrawn such Tender after the advertised closing date and time for the receipt of Tenders;
  - b) has, after being notified of the acceptance of his Tender, failed or refused to sign a contract when called upon to do so in terms of any condition forming part of the Tender documents;
  - c) has carried out any contract resulting from such Tender in an unsatisfactory manner or has breached any condition of the contract;
  - d) has offered, promised or given a bribe in relation to the obtaining or execution of the contract;

- e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise or person;
  - f) has made any incorrect statement in a certificate or other communication with regard to the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:
    - (i) he made the statement in good faith honestly believing it to be correct; and
    - (ii) before making such statement he took all reasonable steps to satisfy himself of its correctness;
  - g) caused Transnet damage, or to incur costs in order to meet the contractor's requirements and which could not be recovered from the contractor;
  - h) has litigated against Transnet in bad faith.
- 6.8 Grounds for blacklisting include a company/person recorded as being a company or person prohibited from doing business with the public sector on National Treasury's database of Restricted Service Providers or Register of Tender Defaulters.
- 6.9 Companies associated with the person/s guilty of misconduct (i.e. entities owned, controlled or managed by such persons), any companies subsequently formed by the person(s) guilty of the misconduct and/or an existing company where such person(s) acquires a controlling stake may be considered for blacklisting. The decision to extend the blacklist to associated companies will be at the sole discretion of Transnet.

## **7 PREVIOUS TRANSGRESSIONS**

- 7.1 The Tenderer/Service Provider/Contractor hereby declares that no previous transgressions resulting in a serious breach of any law, including but not limited to, corruption, fraud, theft, extortion and contraventions of the Competition Act 89 of 1998,

which occurred in the last 5 (five) years with any other public sector undertaking, government department or private sector company that could justify its exclusion from its registration on the Tenderer's/Service Provider's/Contractor's database or any tendering process.

- 7.2 If it is found to be that the Tenderer/Service Provider/Contractor made an incorrect statement on this subject, the Tenderer/Service Provider/Contractor can be rejected from the registration process or removed from the Tenderer/

Service Provider/Contractor database, if already registered, for such reason (refer to the Breach of Law Returnable Form contained in the document.)

## **8 SANCTIONS FOR VIOLATIONS**

- 8.1 Transnet shall also take all or any one of the following actions, wherever required to:
- a) Immediately exclude the Tenderer/Service Provider/Contractor from the tendering process or call off the pre-contract negotiations without giving any compensation the Tenderer/Service Provider/Contractor. However, the proceedings with the other Tenderer/ Service Provider/Contractor may continue;
  - b) Immediately cancel the contract, if already awarded or signed, without giving any compensation to the Tenderer/Service Provider/Contractor;
  - c) Recover all sums already paid by Transnet;
  - d) Encash the advance bank guarantee and performance bond or warranty bond, if furnished by the Tenderer/Service Provider/Contractor, in order to recover the payments, already made by Transnet, along with interest;
  - e) Cancel all or any other contracts with the Tenderer/Service Provider/Contractor; and
  - f) Exclude the Tenderer/ Service Provider/Contractor from entering into any Tender with Transnet in future.

## **9 CONFLICTS OF INTEREST**

- 9.1 A conflict of interest includes, inter alia, a situation in which:
- a) A Transnet employee has a personal financial interest in a tendering / supplying entity; and
  - b) A Transnet employee has private interests or personal considerations or has an affiliation or a relationship which affects, or may affect, or may be perceived to affect his / her judgment in action in the best interest of Transnet, or could affect the employee's motivations for acting in a particular manner, or which could result in, or be perceived as favouritism or nepotism.
- 9.2 A Transnet employee uses his / her position, or privileges or information obtained while acting in the capacity as an employee for:
- a) Private gain or advancement; or
  - b) The expectation of private gain, or advancement, or any other advantage accruing to the employee must be declared in a prescribed form.

Thus, conflicts of interest of any Tender committee member or any person involved in the sourcing process must be declared in a prescribed form.

- 9.3 If a Tenderer/Service Provider/Contractor has or becomes aware of a conflict of interest i.e. a family, business and / or social relationship between its owner(s)/ member(s)/director(s)/partner(s)/shareholder(s) and a Transnet employee/ member of Transnet's Board of Directors in respect of a Tender

which will be considered for the Tender process, the Tenderer/Service Provider/ Contractor:

- a) must disclose the interest and its general nature, in the Request for Proposal (“RFX”) declaration form; or
- b) must notify Transnet immediately in writing once the circumstances has arisen.

9.4 The Tenderer/Service Provider/Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any committee member or any person involved in the sourcing process, where this is done, Transnet shall be entitled forthwith to rescind the contract and all other contracts with the Tenderer/Service Provider/Contractor.

## 10 DISPUTE RESOLUTION

10.1 Transnet recognises that trust and good faith are pivotal to its relationship with its Tenderer / Service Provider / Contractor. When a dispute arises between Transnet and its Tenderer / Service Provider / Contractor, the parties should use their best endeavours to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on which commercial relationships are based. Accordingly, following a blacklisting process as mentioned in paragraph 6 above, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) **Vexatious proceedings:** these are frivolous proceedings which have been instituted without proper grounds;
- b) **Perjury:** where a Tenderer / Service Provider / Contractor make a false statement either in giving evidence or on an affidavit;
- c) **Scurrilous allegations:** where a Tenderer / Service Provider / Contractor makes allegations regarding a senior Transnet employee which are without proper foundation, scandalous, abusive or defamatory; and
- d) **Abuse of court process:** when a Tenderer / Service Provider / Contractor abuses the court process in order to gain a competitive advantage during a Tender process.

## 11 GENERAL

11.1 This Integrity Pact is governed by and interpreted in accordance with the laws of the Republic of South Africa.

11.2 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the law relating to any civil or criminal proceedings.

11.3 The validity of this Integrity Pact shall cover all the tendering processes and will be valid for an indefinite period unless cancelled by either Party.



11.4 Should one or several provisions of this Integrity Pact turn out to be invalid the remainder of this Integrity Pact remains valid.

11.5 Should a Tenderer/Service Provider/Contractor be confronted with dishonest, fraudulent or corruptive behaviour of one or more Transnet employees, Transnet expects its Tenderer/Service Provider/Contractor to report this behaviour directly to a senior Transnet official/employee or alternatively by using Transnet's "Tip-Off Anonymous" hotline number 0800 003 056, whereby your confidentiality is guaranteed.

The Parties hereby declare that each of them has read and understood the clauses of this Integrity Pact and shall abide by it. To the best of the Parties' knowledge and belief, the information provided in this Integrity Pact is true and correct.

---

I ..... duly authorised by the tendering entity, hereby certify that the tendering entity are **fully acquainted** with the contents of the Integrity Pact and further **agree to abide by it** in full.

Signature .....

Date .....



## T2.2-20 : Supplier Code of Conduct

Transnet SOC Limited aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Policy – A guide for Tenderers.
- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (BBBEE)
- The Prevention and Combating of Corrupt Activities Act (PRECCA); and
- The Construction Industry Development Board Act (CIDB Act).

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

### ***Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices***

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

#### ***1. Transnet SOC Limited will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.***

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.
- Employees may not receive anything that is calculated to:
  - Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
  - Win or retain business or to influence any act or decision of any person involved in sourcing decisions; or
  - Gain an improper advantage.



- There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our “Tip-offs Anonymous” Hot line to report these acts. (0800 003 056).

**2. *Transnet SOC Limited is firmly committed to the ideas of free and competitive enterprise.***

- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust practices.
- Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing BBBEE spend (fronting).

**3. *Transnet’s relationship with suppliers requires us to clearly define requirements, to exchange information and share mutual benefits.***

- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
  - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
  - Collusion;
  - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, BBBEE status, etc.);
  - Corrupt activities listed above; and
  - Harassment, intimidation or other aggressive actions towards Transnet employees.
- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.



**Conflicts of Interest**

A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet SOC Limited.

- ☒ Doing business with family members.
- ☒ Having a financial interest in another company in our industry

Where possible, contracts will be negotiated to include the above in the terms of such contracts. To the extent such terms are not included in contractual obligations and any of the above code is breached, then Transnet reserves its right to review doing business with these suppliers.

I, \_\_\_\_\_ of \_\_\_\_\_  
*(insert name of Director or as per Authority Resolution from Board of Directors)* *(insert name of Company)*

hereby acknowledge having read, understood and agree to the terms and conditions set out in the "Transnet Supplier Code of Conduct."

Signed this on day \_\_\_\_\_ at \_\_\_\_\_

\_\_\_\_\_  
 Signature

## **T2.2-21 Agreement in terms of Protection of Personal Information Act, 4 of 2013 (“POPIA”)**

### **1. PREAMBLE AND INTRODUCTION**

- 1.1. The rights and obligation of the Parties in terms of the Protection of Personal Information Act, 4 of 2013 (“POPIA”) are included as forming part of the terms and conditions of this contract.

### **2. PROTECTION OF PERSONAL INFORMATION**

- 2.1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No. of 2013 “(POPIA”):

consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.

- 2.2. The Operator will process all information by the Transnet in terms of the requirements contemplated in Section 4(1) of the POPIA:

Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.

- 2.3. The Parties acknowledge and agree that, in relation to personal information of Transnet and the information of a third party that will be processed pursuant to this Agreement , the Operator is:                      **(Name of Tenderer/Contractor .....**) hereinafter Operator and the Data subject is “Transnet”. Operator will process personal information only with the knowledge and authorisation of Transnet and will treat personal information and the information of a third party which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.

- 2.4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this Agreement and the Operator is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.

- 2.5. In terms of this Agreement, the Operator acknowledges that it will obtain and have access to personal information of Transnet and the information of a third party and agrees that it shall only process the information disclosed by Transnet in terms of this



Agreement and only for the purposes as detailed in this Agreement and in accordance with any applicable law.

- 2.6. Should there be a need for the Operator to process the personal information and the information of a third party in a way that is not agreed to in this Agreement, the Operator must request consent from Transnet to the processing of its personal information or and the information of a third party in a manner other than that it was collected for, which consent cannot be unreasonably withheld.
- 2.7. Furthermore, the Operator will not otherwise modify, amend or alter any personal information and the information of a third party submitted by Transnet or disclose or permit the disclosure of any personal information and the information of a third party to any third party without prior written consent from Transnet.
- 2.8. The Operator shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to the services offered to Transnet in terms of this Agreement (physically, through a computer or any other form of electronic communication).
- 2.9. The Operator shall notify Transnet in writing of any unauthorised access to personal information and the information of a third party , cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Operator must inform Transnet of the breach as soon as it has occurred to allow Transnet to take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and the information of a third party and to restore the integrity of the affected personal information as quickly as is possible.
- 2.10. Transnet may, in writing, request the Operator to confirm and/or make available any personal information and the information of a third party in its possession in relation to Transnet and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA.
- 2.11. Transnet may further request that the Operator correct, delete, destroy, withdraw consent or object to the processing of any personal information and the information of a third party relating to the Transnet or a third party in the Operator's s possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations .
- 2.12. In signing this addendum that is in terms of the POPIA, the Operator hereby agrees that it has adequate measures in place to provide protection of the personal information and the information of a third party given to it by Transnet in line with the 8 conditions of



Description of the Service: **Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort an Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and B West under the control of the Depot Engineer, Kimberley South**

the POPIA and that it will provide to Transnet satisfactory evidence of these measures whenever called upon to do so by Transnet.

**The Operator is required to provide confirmation that all measures in terms of the POPIA are in place when processing personal information and the information of a third party received from Transnet:**

YES	
-----	--

NO	
----	--

2.13. Further, the Operator acknowledges that it will be held liable by Transnet should it fail to process personal information in line with the requirements of the POPIA. The Operator will be subject to any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that Transnet submitted to it.

2.14. Should a Tenderer have any complaints or objections to processing of its personal information, by Transnet, the Tenderer can submit a complaint to the Information Regulator on <https://www.justice.gov.za/inforeg/>, click on contact us, click on complaints.IR@justice.gov.za

**3. SOLE AGREEMENT**

3.1. The Agreement, constitute the sole agreement between the parties relating to the subject matter referred to in paragraph 1.1 of this and no amendment/variation/change shall be of any force and effect unless reduced to writing and signed by or on behalf of both parties.

Signed at \_\_\_\_\_ on this \_\_\_\_ day of \_\_\_\_\_ 2021

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

..... (Pty) Ltd / CC

(Operator)

Authorised signatory for and on behalf .....

who warrants that he/she is duly authorised to sign this Agreement.

**AS WITNESSES:**

1. Name: \_\_\_\_\_ Signature: \_\_\_\_\_

2. Name: \_\_\_\_\_ Signature: \_\_\_\_\_

## T2.2-22: Insurance provided by the *Contractor*

Clause 83.1 in NEC3 Term Service Contract (June 2005)(amended June 2006 and April 2013) requires that the *Contractor* provides the insurance stated in the insurance table except any insurance which the *Employer* is to provide as stated in the Contract Data.

Please provide the following details for insurance which the *Contractor* is still to provide. Notwithstanding this information all costs related to insurance are deemed included in the tenderer's rates and prices.

<b>Insurance against (See clause 83.1 of the TSC)</b>	<b>Name of Insurance Company</b>	<b>Cover</b>	<b>Premium</b>
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract			
Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R5 000 000			
Insurance in respect of loss of or damage to own property and equipment.			
(Other)			





## C1.1: Form of Offer & Acceptance

### Offer

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

### **Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South**

The tenderer, identified in the Offer signature block, has

	examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.
--	---

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

The offered total of the Prices exclusive of VAT is	R.....
Value Added Tax @ 15% is	R.....
The offered total of the Prices inclusive of VAT is	R.....
(in words) :	

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

Signature(s)

Name(s) .....

Capacity .....

**For the tenderer:**

*(Insert name and address of organisation)*

Name & signature of witness

Date

Tenderer's CIDB registration number: .....



## Acceptance

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

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Service Information
Part C4	Affected Property

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

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

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

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

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

Signature(s)

Name(s)

Capacity

**for the  
Employer**

Transnet SOC Ltd

*(Insert name and address of  
organisation)*

Date

Transnet Freight Rail

Contract Number: WRAC/KBC/39341 [TFR/2023/08/0013/38702/RFQ]

Description of the Service: Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinsonso  
x distribution transformers in the section Beaconsfield, De Aar, Uppington and Beaufort West under the contr  
Depot Engineer, Kimberley South

TRANSNET



Name &  
signature of  
witness

.....

.....



**Schedule of Deviations**

Note:

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

No.	Subject	Details
1		
2		
3		
4		
5		

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

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

<b>For the tenderer:</b>	<b>For the Employer</b>
Signature .....	.....
Name .....	.....
Capacity .....	.....
On behalf of <i>(Insert name and address of organisation)</i> .....	Transnet SOC Ltd
Name & signature of witness .....	.....
Date .....	.....



Transnet Freight Rail

Contract Number: WRAC/KBC/39341 [ TFR/2023/08/0013/38702/RFQ]

Description of Service: Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South

## C1.2 Contract Data

### Part one - Data provided by the *Employer*

#### Clause Statement

#### Data

**1**

#### **General**

The *conditions of contract* are the core clauses and the clauses for main Option:

dispute resolution Option  
and secondary Options

**A: Priced contract with price list**

**W1: Dispute resolution procedure**

**X2: Changes in the law**

**X18: Limitation of liability**

**Z: *Additional conditions of contract***

of the NEC3 Term Service Contract (June 2005) (and amended June 2006 and April 2013)

10.1

The *Employer* is:  
Address

**Transnet SOC Ltd**

Registered address:  
**Transnet Corporate Centre  
138 Eloff Street  
Braamfontein  
Johannesburg  
2000**

Having elected its Contractual Address for the purposes of this contract as:

**Transnet Freight Rail  
Supply Chain Management  
Rail Engineering Building  
Room 101  
Bloemfontein**

Tel No.

**(051) 408 2206**

10.1

The *Service Manager* is (name):

**Gibson Mgiba**



Transnet Freight Rail

Contract Number: WRAC/KBC/39341 [ TFR/2023/08/0013/38702/RFQ]

Description of Service: Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South

Address	<b>Depot Engineer Rail Network Kimberley South</b>
e-mail	<a href="mailto:Gibson.Mgiba@Transnet.net">Gibson.Mgiba@Transnet.net</a>
11.2(2) The Affected Property is	<b>Beaconsfield, De Aar, Upington and Beaufort West</b>
11.2(13) The <i>service</i> is	<b>Refurbishment of 132kV and 25kV Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South</b>
11.2(14) The following matters will be included in the Risk Register	<b>1. Electrocution 2. Derailment 3. Collision</b>
11.2(15) The Service Information is in	<b>The Scope of Services</b>
12.2 The <i>law of the contract</i> is the law of	<b>the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.</b>
13.1 The <i>language of this contract</i> is	<b>English</b>
13.3 The <i>period for reply</i> is	<b>4 weeks</b>
<b>2</b> <b>The Contractor's main responsibilities</b>	<b>No additional data is required for this section of the <i>conditions of contract</i></b>
21.1 The <i>Contractor</i> submits a first plan for acceptance within	<b>2 weeks of the Contract Date</b>
<b>3</b> <b>Time</b>	
30.1 The <i>starting date</i> is.	<b>Pending</b>
30.1 The <i>service period</i> is	<b>4 Months</b>
<b>4</b> <b>Testing and defects</b>	<b>No additional data is required for this section of the <i>conditions of contract</i>.</b>
<b>5</b> <b>Payment</b>	
50.1 The <i>assessment interval</i> is	<b>25<sup>th</sup> (twenty fifth) day of each successive month.</b>
51.1 The <i>currency of this contract</i> is the	<b>South African Rand.</b>
51.2 The period within which payments are made is	<b>Payment will be effected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.</b>



Transnet Freight Rail

Contract Number: WRAC/KBC/39341 [ TFR/2023/08/0013/38702/RFQ]

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51.4	The <i>interest rate</i> is	<b>The prime lending rate of the Standard Bank South Africa.</b>
<b>6</b>	<b>Compensation events</b>	<b>No additional data is required for this section of the <i>conditions of contract</i></b>
<b>7</b>	<b>Use of Equipment Plant and Materials</b>	<b>No additional data is required for this section of the <i>conditions of contract</i>.</b>
<b>8</b>	<b>Risks and insurance</b>	
80.1	These are additional <i>Employer's</i> risks	<b>None</b>
83.1	The minimum limit of indemnity for insurance in respect of loss and damage to property (except goods, plant and materials and equipment) and liability for bodily injury or death of a person (not an employee of the <i>Contractor</i> ) caused by activity in connection with this contract for any one event is:	<b>Whatever <i>Contractor</i> deems necessary as the <i>Employer</i> is not carrying this indemnity.</b>
83.1	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract for any one event is:	<b>As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Contractor's</i> common law liability for people falling outside the scope of the Act.</b>
83.1	Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000	
83.1	The <i>Contractor</i> liability to the <i>Employer</i> for indirect or consequential loss including loss of profit, revenue and goodwill, is limited to:	<b>The Total of the Prices.</b>
83.1	For any one event, the <i>Contractor</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employers</i> property is limited to:	<b>The Total of the Prices.</b>
83.1	The <i>Contractor</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than the excluded matters, is limited to:	<b>The Total of the Prices.</b>



Transnet Freight Rail

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<b>9</b>	<b>Termination</b>	<b>There is no Contract Data required for this section of the <i>conditions of contract</i>.</b>
<b>10</b>	<b>Data for main Option clause</b>	
<b>A</b>	<b>Priced contract with price list</b>	
20.5	The <i>Contractor</i> prepares forecasts of the final total of the Prices for the whole of the <i>service</i> at intervals no longer than	<b>2 weeks.</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	The <i>Adjudicator</i> is (Name)	<b>Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the <i>Adjudicator</i>, the chairman of the Association of Arbitrators will appoint an <i>Adjudicator</i>.</b>
W1.2(3)	The <i>Adjudicator nominating body</i> is:  If no <i>Adjudicator nominating body</i> is entered, it is	<b>The Association of Arbitrators (Southern Africa)</b>
W1.4(2)	The <i>tribunal</i> is:	<b>Arbitration</b>
W1.4(5)	The <i>arbitration procedure</i> is	<b>The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)</b>
	The place where arbitration is to be held is	<b>Kimberley, South Africa</b>
	The person or organisation who will choose an arbitrator	<b>The Chairman of the Association of Arbitrators (Southern Africa)</b>
	- if the Parties cannot agree a choice or	
	- if the arbitration procedure does not state who selects an arbitrator, is	
<b>12</b>	<b>Data for secondary Option clauses</b>	
<b>X2</b>	<b>Changes in the law</b>	<b>No additional data is required for this Option</b>
<b>X18</b>	<b>Limitation of liability</b>	
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to	<b>Nil</b>



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X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to	<b>The deductible of the relevant insurance policy</b>
X18.3	The <i>Contractor's</i> liability for Defects due to his design of an item of Equipment is limited to	<b>The cost of correcting the defect.</b>
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> , for all matters arising under or in connection with this contract, other than the excluded matters, is limited to	<b>Total of the Prices.</b>
X18.5	The <i>end of liability date</i> is	<b>3 years after the end of the <i>service period</i>.</b>
<b>Z</b>	<b><i>Additional conditions of contract</i></b>	
<b>Z1</b>	<b>Obligations in respect of Termination</b>	
Z1.1		<p>The following will be included under core clause 91.1:</p> <p>In the second main bullet, after the word 'partnership' add 'joint venture whether incorporated or otherwise (including any constituent of the joint venture)'; and</p> <p>Under the second main bullet, insert the following additional bullets after the last sub bullet:</p> <ul style="list-style-type: none"> <li>■ commenced business rescue proceedings (R22)</li> <li>■ repudiated this Contract (R23)</li> </ul>
Z1.2	Termination Table	<p>The following will be included under core clause 90.2 Termination Table as follows:</p> <p>Amend "A reason other than R1 - R21" to "A reason other than R1 - R23"</p>
Z1.3		Amend "R1 - R15 or R18" to "R1 - R15, R18, R22 or R23."
<b>Z2</b>	<b>Right Reserved by Transnet to Conduct Vetting through SSA</b>	



Transnet Freight Rail

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Z2.1	<p>Transnet reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any Contractor who has access to National Key Points for the following without limitations:</p> <ol style="list-style-type: none"> <li>1. Confidential - this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state.</li> <li>2. Secret - clearance is based on any information which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state.</li> <li>3. Top Secret - this clearance is based on information which may be used by malicious, opposing or hostile elements to neutralise the objectives and functions of an organ of state.</li> </ol>
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**Z3 Additional clause relating to Collusion in the Construction Industry**

Z3.1	<p>The contract award is made without prejudice to any rights Transnet may have to take appropriate action later with regard to any declared bid rigging including blacklisting.</p>
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**Z4 Protection of Personal Information Act**

Z4.1	<p>The <i>Employer</i> and the <i>Contractor</i> are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act</p>
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## C1.2 Contract Data

### Part two - Data provided by the *Contractor*

The tendering contractor is advised to read both the NEC3 Term Service Contract (June 2005) and the relevant parts of its Guidance Notes (TSC3-GN) in order to understand the implications of this Data which the tenderer is required to complete.

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

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is	.....% .....%
11.2(14)	The following matters will be included in the Risk Register	.....
11.2(15)	The Service Information for the <i>Contractor's</i> plan is in:	.....
21.1	The plan identified in the Contract Data is contained in:	.....
24.1	The key persons are:	
	1 Name:	.....
	Job:	.....
	Responsibilities:	.....
	Qualifications:	.....
	Experience:	.....
	2 Name:	.....
	Job	.....
	Responsibilities:	.....
	Qualifications:	.....
	Experience:	.....
		.....



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**CV's (and further key person's data including CVs) are in .....**

<b>A</b>	<b>Priced contract with price list</b>
11.2(12)	The <i>price list</i> is in .....
11.2(19)	The tendered total of the Prices is <b>R</b> .....

## PART C2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option A	1
C2.2	Price List	16

## C2.1 Pricing instructions: Option A

### 1.1 The conditions of contract

### 1.2 How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Term Services Contract (TSC), June 2005 (with amendments June 2006 and April 2013) Option A states:

Identified 11  
and defined  
terms

- 11.2 (17) The Price for Services Provided to Date is the total of
- the Price for each lump sum item in the Price List which the *Contractor* has completed and
  - where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the *Contractor* has completed by the rate.

(19) The Prices are the amounts stated in the Price column of the Price List, where a quantity is stated for an item in the Price List, the Price is calculated by multiplying the quantity by the rate.

### 1.3 Measurement and Payment

- 1.3.1 The Price List provides the basis of all valuations of the Price for Services Provided to Date, payments in multiple currencies and general progress monitoring.
- 1.3.2 The amount due at each assessment date is based on activities and/or milestones completed as indicated on the Price List.
- 1.3.3 The Price List work breakdown structure provided by the *Contractor* is based on the activity/milestone provided by the *Employer*. The activities listed by the *Employer* are the minimum activities acceptable and identify the specific activities which are required to achieve Completion. **The Price List work breakdown structure is compiled to the satisfaction of the *Employer* with any additions and/or amendments deemed necessary.**
- 1.3.4 The *Contractor's* detailed Price List summates back to the activity/milestone provided by the *Employer* and is sufficient detail to monitor completion of activities related to the operations on the Accepted Plan in order that payment of completed activities may be assessed.
- 1.3.5 The Prices are obtained from the Price List. The Prices includes for all direct and indirect costs, overheads, profits, risks, liabilities, obligations, etc. relative to the contract.

## C2.2 Price List

### BRAKPOORT (SECTION DE AAR to Beaufort West @101KM from De Aar)

#### Refurbishment of a 132/25 kV, 20MVA Traction transformer

##### 1.1 Price List Brakpoort Transformer

Item	Description	Quantity	Unit	Price
<b>A</b>	<b>The dismantling, of the transformer fins and conservator tank with all associated brackets</b>			
<b>1</b>	Close the main transformer oil valves leading to the cooling fins and conservator tank. Drain the oil from the cooling fins and conservator tank in a suitable container. (No leaks or spillage allowed and the container must be PCB free)	1	Act	
<b>2</b>	Transformer fins; Remove the transformer cooling fins with all attachments and support brackets if applicable, place/stack the fins neatly on site. Ensure that all the valves and taps are properly closed. Blank off the main transformer valves with a suitable blanking plates to ensure that no oil leaks from the main tank may occur. (The transformer dimensions and weight is attached.)	1	Act	
<b>3</b>	Specify the hydraulic crane lifting capacity at various reach distances. (Test certificates)	1	Act	
<b>Subtotal (A)</b>				

<b>B</b>	<b>Transformer Core and Core windings</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Drain the oil from the transformer main tank.	1	Act	
<b>2</b>	Remove the transformer main tank inspection lids to allow the contractor to disconnect the MV bushing and replace it with new bushings . care must be taken not to damage the CT's inside the main tank	1	Act	
<b>3</b>	Re-insulate the HV and MV leads to the various bushings with paper tape eight layers per conductor.	1	Act	
<b>4</b>	During the mentioned process the transformer must be fitted with a suitable cover which will prevent dust, rain and any impurities from entering into the tank.	1	Act	
<b>5</b>	Megger test the core insulation immediately after the cleaning and repair process	1	Act	



<b>6</b>	Replace all gaskets, seals and fill the main tank with oil, vacuum of the main tank to be <b>maintained at the correct vacuum</b> (Kpa)	1	Act	
<b>7</b>	Supply and fit new core/earth insulator on the outside of the main tank ,with new gaskets and cone rubber seal.	1	Act	
<b>Subtotal (B)</b>				

<b>C</b>	<b>The measurement and protection equipment</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Completely refurbish the mentioned equipment, oil and winding temperature probes and pockets.	1	Act	
<b>2</b>	Repair all leaks to the Bucholtz relay including the test valve and sight glass gaskets. <b>NEW</b>	1	Act	
<b>3</b>	Service, secure and seal all control/protection - wiring/terminations inside the main tank before closing.	1	Act	
<b>4</b>	Service transformer termination box ensure no loose connections or oil leaks	1	Act	
<b>Subtotal (C)</b>				

<b>D</b>	<b>Transformer cooling fins</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Completely refurbish all the cooling fins, attachment brackets, gaskets "type TF72", drain plugs, valves, O rings, dowty washers and seals	1	Act	
<b>2</b>	The transformer cooling fins and support brackets, spot remove all rust/ corrosion areas plus an additional 30mm of the existing paint around the effected area, degrease check for surface damage clean and paint one coat NS4 red colour.	1	Act	
<b>3</b>	Rust spot repaired areas degreased and be painted according to specification CEE 0045.90. (two coats)	1	Act	
<b>4</b>	Clean the inside of each fin to ensure that no carbon, sludge or any other impurities are trapped inside the fins, which might contaminate the new oil. (Air blast and rinse with clean oil)	1	Act	
<b>5</b>	All the cooling fins must be pressure tested to ensure that no leakage of the oil will occur. TFR staff to be present.	1	Act	
<b>6</b>	Replace all the transformer cooling fin spacer bolts and nuts with hot dip galvanised bolts and nut of similar material and dimensions.	1	Act	
<b>Subtotal (D)</b>				



<b>E</b>	<b>Transformer main tank</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Transformer main tank repair or replace drain valves, plugs, washers, O-rings, gaskets, temperature control box, Bucholtz pipes and temperature probes.	1	Act	
<b>2</b>	The outside of the transformer main tank and all attachment brackets, spot remove all rust/corrosion plus an additional 30mm of the existing paint around the effected area, degrease check for surface damage clean and paint one coat NS4 red colour.	1	Act	
<b>3</b>	Rust spot repair areas to be degreased, and be painted according to specification CEE 0045.90.Painting of steel component of electrical equipment (two coats)	1	Act	
<b>4</b>	All the gaskets must be replaced with type TF72 of same thickness. Size 10mm gasket on the inspection lids. The stop and drain valves, drain plugs, washers and O-rings must be replaced.	1	Act	
<b>5</b>	Allow for the replacement of all broken or missing bolts and nuts as well as the bushing studs (16mm)	1	Act	
<b>6</b>	Raise main transformer tank, from the plinth, secure the tank, remove all rust, degrease check for surface damage clean and paint two coats NS4 red. Fit malthoid 3 layers and lower main tank	1	Act	
<b>7</b>	Supply of Pressure relief valve	1	Act	
<b>8</b>	Supply of Oil Gauge	1	Act	
<b>9</b>	Supply of Temperature Gauge	1	Act	
<b>Subtotal (E)</b>				

<b>F</b>	<b>Transformer conservator oil tank with supporting brackets</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	The transformer conservator tank and all pipes and attachment brackets, do spot repairs on all rust/corrosion areas, plus remove an additional 30mm of the existing paint around the effected area, degrease, check for surface damage clean and paint one coat NS4 red colour. Fit bolts new if required.	1	Act	



<b>2</b>	The rust spot repaired areas of the transformer conservator tank, and all attachment brackets must be sanded down, degreased and be painted according to <b>specification CEE 0045.90</b> . (two coats) white NOXIDE.	1	Act	
<b>3</b>	The conservator tank must be pressure tested to ensure that no leakage of the oil will occur.	1	Act	
<b>4</b>	All the gaskets must be replaced with type TF72 and all the stop valves refurbish and washers, O rings be replaced.	1	Act	
<b>5</b>	Supply and install new site glasses and site glass housings where required.	1	Act	
<b>6</b>	Allow for the replacement of all broken or missing bolts and nuts as well as the bushing studs	1	Act	
<b>Subtotal (F)</b>				

<b>G</b>	<b>Transformer oil and testing</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	The transformer oil drained from the main tank and fins must be cleaned via a vacuum filter process to ensure the removal of all dissolved gasses and impurities, Minimum dielectric strength must be at least 65kV with a water content of less than 10ppm at ...° C. No direct contact between the oil and heater elements will be allowed. Supply detailed filter process to be utilized and oil test specifications e.g. temperature, vacuum, type of filter cartridges, and different oil test to be performed "Specify". Contractor to supply own oil and generator plant.	1	Act	
<b>Subtotal (G)</b>				

<b>H</b>	<b>Reassemble the transformer on site</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Fit the cooling fins to the main transformer complete with gaskets and torque all bolts and nuts to specification employing standard torque settings.	1	Act	
<b>2</b>	Fill the transformer with the existing oil , Test certificates to be made available. Oil must be PCB	1	Act	
<b>3</b>	Check all gaskets, valve, stop cocks for oil leaks and repair on site			
<b>4</b>	Filter complete transformer 3 passes minimum to meet required standards and specifications	1	Act	
<b>5</b>	Performed final test and energise: Winding resistance, Ratio, Insulation and oil,	1	Act	



6	Clean site from any redundant parts, oil spillage etc (TFR to witness all test)	1	Act	
<b>Subtotal (H)</b>				



<b>I</b>	<b>Site establishment</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Provide filter plant (PCB free)	1	Act	
<b>2</b>	Provide generator plant	1	Act	
<b>3</b>	Provide mobile crane to lift oil cooling fins and main tank lid ( ____ ) ton	1	Act	
<b>4</b>	Provide Hydraulic jacks to raise the main transformer tank	1	Act	
<b>5</b>	Provide reservoir (PCB free)	1	Act	
<b>6</b>	Transport Cost	1	Act	
<b>7</b>	Accommodation Cost	1	Act	
<b>8</b>	P & G's	1	Act	
<b>Subtotal (I)</b>				

<b>J</b>	<b>Safety cost SHE plan</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Compile Safety File; Written safe working statement for each process:	1	Act	
1.1	Remove and assemble of the transformer cooling fins.		Act	
1.2	Remove and assemble of the transformer conservator tank and attachment brackets.		Act	
1.3	Remove and assemble of the transformer 132kV and 25kV Bushings		Act	
1.4	Remove and refit of the transformer main lid		Act	
1.5	The raise and lowering of the transformer main tank		Act	
<b>2</b>	Compile a risk assessment on:	1	Act	
2.1	Possible fire, causes, probability, estimate damage prevention, action plan		Act	
2.2	Oil Pollution, Causes, probability, estimate cleanup cost, prevention, action plan		Act	
2.3	Lifting equipment failure, Cause of failure, Probability, Estimate damage, prevention and action plan		Act	



2.4	High Voltage shock, causes, probability, estimated cost, prevention and action plan	1	Act	
2.5	Level crossings accidents, causes, probability, estimated cost, prevention, action plan	1	Act	
				<b>Subtotal (J)</b>

No	Specify any additional recommended work or test	Quantity	Unit	Price	Total
1					
2					
3					
4					
5					
<b>Additional option cost outside tender scope</b>					



## Summary for Brakpoort Transformer

<b>Subtotal (A)</b>	
<b>Subtotal (B)</b>	
<b>Subtotal (C)</b>	
<b>Subtotal (D)</b>	
<b>Subtotal (E)</b>	
<b>Subtotal (F)</b>	
<b>Subtotal (G)</b>	
<b>Subtotal (H)</b>	
<b>Subtotal (I)</b>	
<b>Subtotal (J)</b>	
<b>Specify any additional recommended work or test</b>	
<b>Total 1 (Excl VAT)</b>	

**1.2 Price List HUTCHINSON (SECTION DE AAR to Beaufort West****@133KM from De Aar)****REFURBISHMENT OF A 132/25 KV, 20MVA TRACTION TRANSFORMER**

Item	Description	Quantity	Unit	Price
<b>A</b>	<b>The dismantling, of the transformer fins and conservator tank with all associated brackets</b>			
<b>1</b>	Close the main transformer oil valves leading to the cooling fins and conservator tank. Drain the oil from the cooling fins and conservator tank in a suitable container. (No leaks or spillage allowed and the container must be PCB free)	1	Act	
<b>2</b>	Transformer fins; Remove the transformer cooling fins with all attachments and support brackets if applicable, place/stack the fins neatly on site. Ensure that all the valves and taps are properly closed. Blank off the main transformer valves with a suitable blanking plates to ensure that no oil leaks from the main tank may occur. (The transformer dimensions and weight is attached.)	1	Act	
<b>3</b>	Specify the hydraulic crane lifting capacity at various reach distances. (Test certificates)	1	Act	
<b>Subtotal (A)</b>				

<b>B</b>	<b>Transformer Core and Core windings</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Drain the oil from the transformer main tank.	1	Act	
<b>2</b>	Remove the transformer main tank inspection lids to allow the contractor to disconnect the MV bushing and replace it with new bushings . care must be taken not to damage the CT's inside the main tank	1	Act	
<b>3</b>	Re-insulate the HV and MV leads to the various bushings with paper tape eight layers per conductor.	1	Act	
<b>4</b>	During the mentioned process the transformer must be fitted with a suitable cover which will prevent dust, rain and any impurities from entering into the tank.	1	Act	
<b>5</b>	Megger test the core insulation immediately after the cleaning and repair process	1	Act	



<b>6</b>	Replace all gaskets, seals and fill the main tank with oil, vacuum of the main tank to be <b>maintained at the correct vacuum.....kPA</b>	1	Act	
<b>7</b>	Supply and fit new core/earth insulator on the outside of the main tank ,with new gaskets and cone rubber seal.	1	Act	
<b>Subtotal (B)</b>				

<b>C</b>	<b>The measurement and protection equipment</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Completely refurbish the mentioned equipment, oil and winding temperature probes and pockets.	1	Act	
<b>2</b>	Repair all leaks to the Bucholtz relay including the test valve and sight glass gaskets. <b>NEW</b>	1	Act	
<b>3</b>	Service, secure and seal all control/protection - wiring/terminations inside the main tank before closing.	1	Act	
<b>4</b>	Service transformer termination box ensure no loose connections or oil leaks	1	Act	
<b>Subtotal (C)</b>				

<b>D</b>	<b>Transformer cooling fins</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Completely refurbish all the cooling fins, attachment brackets, gaskets "type TF72", drain plugs, valves, O rings, dowty washers and seals	1	Act	
<b>2</b>	The transformer cooling fins and support brackets, spot remove all rust/ corrosion areas plus an additional 30mm of the existing paint around the effected area, degrease check for surface damage clean and paint one coat NS4 red colour.	1	Act	
<b>3</b>	Rust spot repaired areas degreased and be painted according to specification CEE 0045.90. (two coats)	1	Act	
<b>4</b>	Clean the inside of each fin to ensure that no carbon, sludge or any other impurities are trapped inside the fins, which might contaminate the new oil. (Air blast and rinse with clean oil)	1	Act	
<b>5</b>	All the cooling fins must be pressure tested to ensure that no leakage of the oil will occur. TFR staff to be present.	1	Act	
<b>6</b>	Replace all the transformer cooling fin spacer bolts and nuts with hot dip galvanised bolts and nut of similar material and dimensions.	1	Act	
<b>Subtotal (D)</b>				

<b>E</b>	<b>Transformer main tank</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Transformer main tank repair or replace drain valves, plugs, washers, O-rings, gaskets, temperature control box, Bucholtz pipes and temperature probes.	1	Act	
<b>2</b>	The outside of the transformer main tank and all attachment brackets, spot remove all rust/corrosion plus an additional 30mm of the existing paint around the effected area, degrease check for surface damage clean and paint one coat NS4 red colour.	1	Act	
<b>3</b>	Rust spot repair areas to be degreased, and be painted according to specification CEE 0045.90.Painting of steel component of electrical equipment (two coats)	1	Act	
<b>4</b>	All the gaskets must be replaced with type TF72 of same thickness. Size 10mm gasket on the inspection lids. The stop and drain valves, drain plugs, washers and O-rings must be replaced.	1	Act	
<b>5</b>	Allow for the replacement of all broken or missing bolts and nuts as well as the bushing studs (16mm)	1	Act	
<b>6</b>	Raise main transformer tank, from the plinth, secure the tank, remove all rust, degrease check for surface damage clean and paint two coats NS4 red. Fit malthoid 3 layers and lower main tank	1	Act	
<b>Subtotal (E)</b>				

<b>F</b>	<b>Transformer conservator oil tank with supporting brackets</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	The transformer conservator tank and all pipes and attachment brackets, do spot repairs on all rust/corrosion areas, plus remove an additional 30mm of the existing paint around the effected area, degrease, check for surface damage clean and paint one coat NS4 red colour. Fit bolts new if required.	1	Act	
<b>2</b>	The rust spot repaired areas of the transformer conservator tank, and all attachment brackets must be sanded down, degreased and be painted according to <b>specification CEE 0045.90</b> . (two coats) white NOXIDE.	1	Act	
<b>3</b>	The conservator tank must be pressure tested to ensure that no leakage of the oil will occur.	1	Act	
<b>4</b>	All the gaskets must be replaced with type TF72 and all the stop valves refurbish and washers, O rings be replaced.	1	Act	

<b>5</b>	Supply and install new site glasses and site glass housings where required.	1	Act	
<b>6</b>	Allow for the replacement of all broken or missing bolts and nuts as well as the bushing studs	1	Act	
<b>Subtotal (F)</b>				

<b>G</b>	<b>Transformer oil and testing</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	The transformer oil drained from the main tank and fins must be cleaned via a vacuum filter process to ensure the removal of all dissolved gasses and impurities, Minimum dielectric strength must be at least 65kV with a water content of less than 10ppm at ...° C. No direct contact between the oil and heater elements will be allowed. Supply detailed filter process to be utilized and oil test specifications e.g. temperature, vacuum, type of filter cartridges, and different oil test to be performed "Specify". Contractor to supply own oil and generator plant.	1	Act	
<b>Subtotal (G)</b>				

<b>H</b>	<b>Reassemble the transformer on site</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Fit the cooling fins to the main transformer complete with gaskets and torque all bolts and nuts to specification employing standard torque settings.	1	Act	
<b>2</b>	Fill the transformer with the existing oil , Test certificates to be made available. Oil must be PCB	1	Act	
<b>3</b>	Check all gaskets, valve, stop cocks for oil leaks and repair on site			
<b>4</b>	Filter complete transformer 3 passes minimum to meet required standards and specifications	1	Act	
<b>5</b>	Performed final test and energise: Winding resistance, Ratio, Insulation and oil,	1	Act	
<b>6</b>	Clean site from any redundant parts, oil spillage etc (TFR to witness all test)	1	Act	
<b>Subtotal (H)</b>				

<b>I</b>	<b>Site establishment</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Provide filter plant (PCB free)	1	Act	
<b>2</b>	Provide generator plant	1	Act	
<b>3</b>	Provide mobile crane to lift oil cooling fins and main tank lid ( ____ ) ton	1	Act	
<b>4</b>	Provide Hydraulic jacks to raise the main transformer tank	1	Act	
<b>5</b>	Provide reservoir (PCB free)	1	Act	
<b>6</b>	Transport Cost	1	Act	
<b>7</b>	Accommodation Cost	1	Act	
<b>8</b>	P & G's	1	Act	
				<b>Subtotal (I)</b>

<b>J</b>	<b>Safety cost SHE plan</b>	<b>Quantity</b>	<b>Unit</b>	<b>Price</b>
<b>1</b>	Compile Safety File; Written safe working statement for each process for :	1	Act	
1.1	Remove and assemble of the transformer cooling fins.		Act	
1.2	Remove and assemble of the transformer conservator tank and attachment brackets.		Act	
1.3	Remove and assemble of the transformer 132kV and 25kV Bushings		Act	
1.4	Remove and refit of the transformer main lid		Act	
1.5	The raise and lowering of the transformer main tank		Act	
<b>2</b>	Compile a risk assessment on the following:	1	Act	
2.1	Possible fire, causes, probability, estimate damage prevention, action plan		Act	
2.2	Oil Pollution, Causes, probability, estimate cleanup cost, prevention, action plan		Act	
2.3	Lifting equipment failure, Cause of failure, Probability, Estimate damage, prevention and action plan		Act	
2.4	High Voltage shock, causes, probability, estimated cost, prevention and action plan		Act	
2.5	Level crossings accidents, causes, probability, estimated cost, prevention, action plan		Act	



					<b>Subtotal (J)</b>

No	Specify any additional recommended work or test	Quantity	Unit	Price	Total
1					
2					
3					
4					
<b>Additional option cost outside tender scope</b>					

**Summary for Hutchinson Transformer**

<b>Subtotal (A)</b>	
<b>Subtotal (B)</b>	
<b>Subtotal (C)</b>	
<b>Subtotal (D)</b>	
<b>Subtotal (E)</b>	
<b>Subtotal (F)</b>	
<b>Subtotal (G)</b>	
<b>Subtotal (H)</b>	
<b>Subtotal (I)</b>	
<b>Subtotal (J)</b>	
<b>Specify any additional recommended work or test</b>	
<b>Total 2 (Excl VAT)</b>	

### **1.3 8 X Distribution Substations 6.6 kV in De Aar in the section**

<b>Item</b>	<b>Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total</b>
1	Remove transformer cooling fins to be re-gasket, together with valves	8	Act		
2	Fill transformer with oil under vacuum according to transformer specs. (Discuss on site).	8	Act		
3	Purify oil to specification – Eng. Inst. Gl. 012 issue 2.	8	Act		
4	Take oil sample for testing (see 6.11).	8	Act		
5	Check, should Sandpaper rust and scrape flakes.	8	Act		
6	Wash transformer (supply own water & soap).	8	Act		
7	Re-spray transformer. Main tank grey (French grey).	8	Act		
8	Re-spray Conservator white.	8	Act		
9	Remove and replace existing site glass with new.	8	Act		
10	Replace existing Bucholtz Relay	8	Act		
11	Replace SA200-4 Silica Gel Breathers	8	Act		
12	Ground rehabilitation must be done at the oil spills.	8	Act		
13	Top up oil level with virgin oil if needed	8	Act		



14	Take oil sample after work is completed, submit oil results	8	Act		
15	Additional work to be specified on site by contractor. (Will be documented)	8	Act		
16	Clean site	8	Act		
				<b>Total 3</b>	

#### 1.4 5 X Distribution Substations 11 kV in Upington and Beaufort West in the section

Item	Description	Quantity	Unit	Unit Price	Total
1	Remove transformer cooling fins to be re-gasket, together with valves	5	Act		
2	Fill transformer with oil under vacuum according to transformer specs. (Discuss on site).	5	Act		
3	Purify oil to specification – Eng. Inst. Gl. 012 issue 2.	5	Act		
4	Take oil sample for testing (see 6.11).	5	Act		
5	Check, should Sandpaper rust and scrape flakes.	5	Act		
6	Wash transformer (supply own water & soap).	5	Act		
7	Re-spray transformer. Main tank grey (French grey).	5	Act		
8	Re-spray Conservator white.	5	Act		
9	Remove and replace existing site glass with new.	5	Act		
10	Replace existing Bucholtz Relay	5	Act		
11	Replace SA200-4 Silica Gel Breathers	5	Act		
12	Ground rehabilitation must be done at the oil spills.	5	Act		
13	Top up oil level with virgin oil if needed	5	Act		
14	Take oil sample after work is completed, submit oil results	5	Act		



15	Additional work to be specified on site by contractor. (Will be documented)	5	Act		
16	Clean site	5	Act		
				<b>Total 4</b>	

<b>Total 1 (Brakpoort)</b>	<b>R</b>
<b>Total 2 (Hutchinson)</b>	<b>R</b>
<b>Total 3 (8 Distribution Transformers 6.6 kV)</b>	<b>R</b>
<b>Total 4 (5 Distribution Transformers 11kV)</b>	<b>R</b>
<b>Subtotal</b>	<b>R</b>
<b>15 % VAT (If Applicable)</b>	<b>R</b>
<b>Total</b>	<b>R</b>

## PART C3: SERVICE INFORMATION

Document reference	Title	No of page
	This cover page	1
C3.1	<i>Employer's Service Information</i>	8
C3.2	<i>Contractor's Works</i>	6
<b>Total number of pages</b>		<b>15</b>

# **INFRASTRUCTURE MAINTENANCE**

## **SPECIFICATION**

### **REFURBISHMENT OF 2 X TRACTION SUBSTATIONS AND 13X DISTRIBUTION SUBSTATIONS**

#### **C3.1 EMPLOYER'S SERVICE INFORMATION**

##### **INDEX**

##### **SECTION CONTENTS**

##### CONTRACT DATA

##### 1.0 SCOPE

##### 2.0 SPECIFICATION

##### 3.0 CONSTRAINTS ON HOW THE CONTRACTOR PROVIDES THE WORKS

##### 4.0 REQUIREMENTS FOR THE PROGRAMME

##### 5.0 SERVICES AND OTHER THINGS PROVIDED BY THE EMPLOYER

##### 6.0 WORKS TO BE DONE BY THE CONTRACTOR

##### 7.0 ANNEXURE OF WORK TO BE DONE ON EACH TRANSFORMER

## Contract Data

The Employer is:-

Name **Transnet SOC Limited Trading as Transnet Freight Rail.....**

Address **Infra Complex, Austen Street 1B, and Beaconsfield. 8301**

Room 29

Telephone **(053) 838 3368**

E-mail **Tlotlo.kesupang@Transnet.net**

The work is:- Repairs 132kV and 25kV Transformer (Refurbishment) on 132kV / 25kV Traction Transformers at Brakpoort and Hutchinson, also 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West under the control of the Depot Engineer, Kimberley South

The sites are:- 1 x 20 MVA Traction Transformer, Hutchinson, between De Aar and Beaufort, 1 x 20 MVA Traction Transformer, Brakpoort between De Aar, Beaufort West and Upington 13 X distribution all of them under the control of the Depot Engineer, Kimberley South.

### SCOPE

- 1.1 This project specification covers the requirements for refurbishment of 2 x 132kV / 25kV 20 MVA Traction Transformer as per attached annexure and Engineering Instruction GI.012 issue 2 and CEE 0229.95 and 14X Distribution substations.
- 1.2 Details of the specific substation locations will be provided by the depot.
- 1.3 The quantities of equipment to be tested will be verified or agreed upon on site between the successful Tenderer and the Project Manager or his representative.

## Section 1: SERVICE INFORMATION

### 2.0 Specifications

#### 2.1 South African National Standards:

2.1.1 Occupational Health and Safety Act No. 85 of 1993 (Available at depot for referral)

#### 2.2 Transnet Freight Rail Specifications:

2.2.1 GI.012 issue 2 - Supervision and of insulating Oils in Electrical Equipment.

2.2.2. CEE-GI.012 -2- Oil test Report

2.2.3 BBB 0348 - Transformer Test Sheet.

2.2.4 All work shall be accordance to TFR Specification BBB 5019 VER 5 and Engineering instruction GI.012 attached and CEE.0229.95. The contractor must comply to specifications mention, failure on above requirement may result disqualification.

### 3.0 Constraints on how the *Contractor* Provides the Works

- 3.1 The constraints shall be as specified in the specifications of the particular equipment.

#### **4.0 Requirements for the programme**

- 4.1 Programme of work : To be submitted by successful Contractor
- 4.2 Format: Gant Chart
- 4.3 Information: How work is going to be executed and commissioned
- 4.4 All tests and work done to be performed strictly in accordance with manufacturers maintenance instructions.
- 4.5 Test person: Must be in possession of a valid competency certificate (TFR).
- 4.6 The contractor's team performing the tests could be required to attend a Transnet Electrical Safety Awareness Course and be authorised to supervise the contractor's staff whilst working in the substations on this contract. This is for the contactors account.
- 4.7 Proof of experience of refurbishment on 20MVA or higher transformers needed. (e.g. Previous TFR contract number)
- 4.8 Work on transformers to be guaranteed for 12 months.

#### **5.0 Services and other things provided by the Employer**

- 5.1 Transnet Freight Rail shall have an electrician/technical assistant available for isolation and the erection of barriers to live electrical equipment and issuing of work permits. (should it be necessary).
- 5.2 Upon successful completion of the works to the satisfaction of Transnet Freight Rail, Transnet Freight Rail shall commission the equipment.

#### **6.0 Work to be done by the contractor.**

- 6.1 The Contractor shall complete the test sheet and defects report where applicable.
- 6.2 The technician/electrician who will assist during the contract is based in the relevant maintenance depot from where he will depart and accompany the contractor every morning.
- 6.3 A technician/electrician from Transnet will provide access to the substations and will issue applicable work/test permits to isolate and earth all equipment before handing it over. The contractor shall confirm the isolation and earthing applied as well as the work limits. No work shall be done in any substation without the presence of a Transnet representative.
- 6.4 The Contractor shall supply the Project Manager with oil test sheets and reports per substation tested.

- 6.5 Transnet shall **NOT** provide security where necessary for the duration of the contract.
- 6.6 See applicable attached test sheet.
- 6.7 Bottom Insulating oil test samples to be taken for **Full Dissolved Gas Analyses**, Moisture content, Acidity, Dielectric strength and Furamic test at each transformer. (Contractor to supply containers and own equipment).
- 6.8 Oil sample shall not be taken within 24hrs after energizing/de-energizing  
Issue 2
- 6.9 See Engineering Instruction GI 012 issue 2 for all specifications on oil quality.
- 6.10 The contractor shall take precaution during filtration, see clause 15.0 of GI 012
- 6.11 The contractor shall submit certificate of compliance and valid calibration certificates of instruments to be use before any work commences. (must be part of the safety file).
- 6.12 Contractor to supply all the necessary plant, materials, tool, equipment and auxiliary power supplies (generators), water etc.
- 6.13 Oil analysis shall be tested by a SANS accredited laboratories only.
- 6.14 Failure of compliance may result in termination of contract or be disqualified.
- 6.15 Contractors safe working procedure regarding risk analysis for the work to be approved by the technical officer before any work shall start.
- 6.16 The contractor will assist and advise on fault finding and repairs as far as possible.
- 6.17 Work to be performed as per Paragraph 8, Work to be done at each transformer.

## **7.0 TENDERING PROCEDURE**

- 7.1 Tenderers shall indicate compliance with the specification. These shall be in English or certified translation.
- 7.2 The contractor shall supply a site diary (three fold). This book shall be used to record any unusual events during the period of the work. Any delays to the work shall also be recorded such as delays caused by poor weather conditions, delays caused by permits being cancelled etc. Such delays must be countersigned by the appointed Technical Officer. Other delays such as non-availability of equipment from 3rd party suppliers must be communicated to the Project Manager in writing.
- 7.3 The contractor shall supply a site instruction book. This book shall be used to record any instructions to the contractor regarding problems encountered on site for example the quality of work or the placement of equipment. This book will be filled in by the Technical Officer or Project Manager and must be countersigned by the Contractor.
- 7.4 Both books mentioned in 7.2 and 7.3 shall be the property of TFR and shall be handed over to the Technical Officer or Project Manager on the day of completion.
- 7.5 Note, that no Site Access will be give before all certificates are on the safety file.
- 7.6 The safety file or a copy thereof will be on site and must be available at all times. The safety file must be submitted for approval before contract starts.

- 7.7 Tenders are required to compile a schedule per Transformer to be tested. Schedule to include all tasks as per specification, time to complete and complete price.
- 7.8 P's and G's Schedule must include total accommodation and travelling costs per Transformer. Prices to exclude VAT.
- 7.9 No payment will be made to Contractor without the full report of tests. The Contractor must submit the invoice for the completed transformer at Kimberley South Depot for payment.
- 7.10 The Electricians who will assist during the contract are based in Beaufort West and De Aar Depots respectively from where they will depart and escort the contractor every morning. Any uncertainties will be discussed at the site meeting.

## 8. Work to be done at each transformer

### 8.1 Hutchinson 132kV / 25kV Traction Transformer. 133/08 km from De Aar in the section Beaufort west.

#### Refurbishment work to be done:-

##### Size of Transformer : 20 MVA

- Remove transformer cooling fins to be re-gasket, together with valves
- Total Re-Gasket (O-Rings, Gaskets, Fins etc.)
- Before work commence transformer must be tested (Get finger print of transformer for later referral)
- Draw vacuum on transformer / or ensure that all bushes are bled. (Discuss on site).
- Fill transformer with oil under vacuum according to transformer specs. (Discuss on site).
- Purify oil to specification - Eng. Inst. Gl. 012 issue 2.
- Take oil sample for testing (see 6.11).
- Check, should sandpaper rust and scrape flakes.
- Wash transformer (supply own water & soap).
- Re-spray transformer.  
Main tank grey (French grey).
- Conservator white.
- Remove and replace existing site glass with new.
- Replace existing Bucholtz Relay
- Replace SA200-4 Silica Gel Breathers
- Ground rehabilitation must be done at the oil spills.
- Top up oil level with virgin oil if needed
- Take oil sample after work is completed, submit oil results
- Additional work to be specified on site by contractor. (Will be documented)
- Clean site.

## 8.2 Brakpoort 132kV / 25kV Traction Transformer. 101.321 km from De Aar in the section De Aar to Victoria West.

### Refurbishment work to be done:-

#### Size of Transformer : 20 MVA

- Remove transformer cooling fins to be re-gasket, together with valves
- Total Re-Gasket (O-Rings, Gaskets, Fins etc.)
- Before work commence transformer must be tested (Get finger print of transformer for later referral)
- Draw vacuum on transformer / or ensure that all bushes are bled. (Discuss on site).
- Fill transformer with oil under vacuum according to transformer specs. (Discuss on site).
- Purify oil to specification - Eng. Inst. Gl. 012 issue 2.
- Take oil sample for testing (see 6.11).
- Check, should sandpaper rust and scrape flakes.
- Wash transformer (supply own water & soap).
- Re-spray transformer.  
Main tank grey (French grey).
- Conservator white.
- Remove and replace existing site glass with new.
- Replace existing Bucholtz Relay
- Replace SA200-4 Silica Gel Breathers
- Ground rehabilitation must be done at the oil spills.
- Top up oil level with virgin oil if needed
- Take oil sample after work is completed, submit oil results
- Additional work to be specified on site by contractor. (Will be documented)
- Clean site.

## 8.3 8 X Distribution Substations 6.6 kV in De Aar in the section

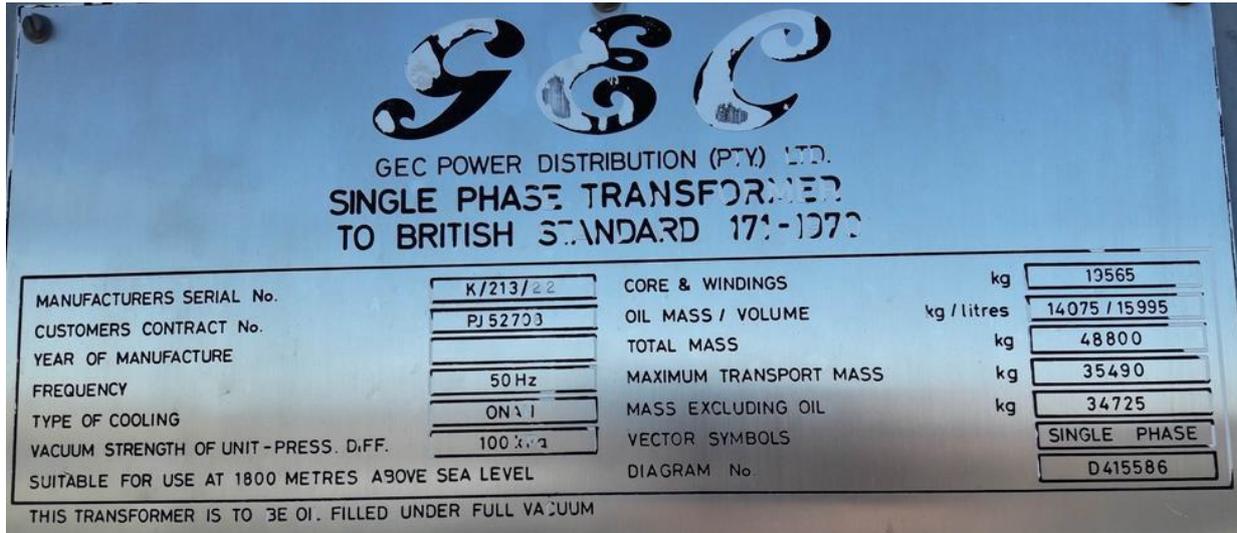
#### Size of Transformer : 200kVA to 800kVA

- Remove transformer cooling fins to be re-gasket, together with valves
- Fill transformer with oil under vacuum according to transformer specs. (Discuss on site).
- Purify oil to specification - Eng. Inst. Gl. 012 issue 2.
- Take oil sample for testing (see 6.11).
- Check, should Sandpaper rust and scrape flakes.
- Wash transformer (supply own water & soap).
- Re-spray transformer.  
Main tank grey (French grey).
- Conservator white.
- Remove and replace existing site glass with new.
- Replace existing Bucholtz Relay
- Replace SA200-4 Silica Gel Breathers
- Ground rehabilitation must be done at the oil spills.
- Top up oil level with virgin oil if needed
- Take oil sample after work is completed, submit oil results
- Additional work to be specified on site by contractor. (Will be documented)
- Clean site.

#### **8.4 5 X Distribution Substations 11 kV in Upington and Beaufort West in the section**

##### **Size of Transformer : 200kVA to 800kVA**

- Remove transformer cooling fins to be re-gasket, together with valves
- Fill transformer with oil under vacuum according to transformer specs. (Discuss on site).
- Purify oil to specification - Eng. Inst. Gl. 012 issue 2.
- Take oil sample for testing (see 6.11).
- Check, should Sandpaper rust and scrape flakes.
- Wash transformer (supply own water & soap).
- Re-spray transformer.  
Main tank grey (French grey).
- Conservator white.
- Remove and replace existing site glass with new.
- Replace existing Bucholtz Relay
- Replace SA200-4 Silica Gel Breathers
- Ground rehabilitation must be done at the oil spills.
- Top up oil level with virgin oil if needed
- Take oil sample after work is completed, submit oil results
- Additional work to be specified on site by contractor. (Will be documented)
- Clean site.



**Brakpoort Transformer**



**Tapchanger (Taped closed with plastic)**



## SECTION 2: CONTRACTOR'S WORKS INFORMATION

### 1 Management and start up

#### 1.1 Management meetings

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	Weekly	Depot	Project Manager (and appropriate delegates), Supervisor (as necessary and appropriate delegates) and Contractor (appropriate key persons)]
Overall contract progress and feedback	Weekly	Depot	Employer, Contractor , and Project Manager (and appropriate delegates)

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

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

#### 1.2 Documentation Control

In undertaking the '*Works*' (including all incidental services required), the *Contractor* shall conform and adhere to the requirements of the 'Contractor Documentation Submittal Requirements' Standard included in Annexure 1 (refer DOC--STD-0001).

The *Contractor* is to ensure that the latest versions of the required application software and a suitable 'IT' Infrastructure are in place to support the electronic transmission of documentation.

#### 1.3 Safety risk management

1.3.1 The *Contractor* ensures that its Subcontractors comply with the requirements of the SMP.

1.3.2 The *Contractor* performs the *works* having due regard to the HSSP.

#### 1.4 Environmental constraints and management

The *Contractor* performs the *works* and all construction activities within the Site and Working Areas having due regard to the environment and to environmental management practices as more particularly described within the SES and PES.

The SES describes the minimal acceptable standard for environmental management for a range of environmental aspects commonly encountered on construction projects and sets environmental objectives and targets, which the *Contractor* observes and complies.

The PES may require higher minimal standards than those described in the SES as may be required by the *Project Manager* or Others.

The overarching obligations of the *Contractor* under the CEMP before construction activities commence on the Site and/or Working Areas is to provide an environmental method statement for a particular construction operation at the Site and/or Working Area by the *Contractor* and where requested by the CM and to comply with the following:

Where relevant, method statements, as detailed in the SES and PES, shall be provided by the *Contractor*. These include, but are not limited to, the following where applicable:

- Establishment of construction lay down area
- Hazardous and non-hazardous solid waste management
- Storm water management
- Contaminated water management
- Prevention of marine pollution
- Hydrocarbon spills
- Diesel tanks and refuelling procedures
- Dust control
- Spoil dumping
- Sourcing, excavating, transporting and dumping of fill material
- Noise and vibration control
- Removal of rare, endemic or endangered species
- Removal and stockpiling of topsoil
- Rodent and pest control
- Environmental awareness training
- Site division
- Emergency procedures for environmental incidents
- *Contractor's* SHE Officer
- Closure of construction laydown area

The *Contractor* shall ensure that his management, foremen and the general workforce, as well as all suppliers and visitors to Site have attended the Induction Programme prior to commencing any *work* on Site. If new personnel commence work on the Site during construction, the *Contractor* shall ensure that these personnel undergo the Induction Programme and are made aware of the environmental specifications on Site.

Where applicable, the *Contractor* ensures that he appoints a suitably qualified Subcontractor, to be approved by the *Project Manager*, to undertake the "Removal of rare, endemic or endangered species". This appointment must be completed at least three weeks before commencement of any other work on Site.

The Protection of the Environment Form] shall be signed and submitted to the CM within 14 days after the Contract Date.

Where required, one of the first actions to be undertaken by the *Contractor* shall be to erect and maintain a temporary fence along the boundaries of the Site and Working Areas as applicable, and around any no-go areas identified on the layout plans, to the satisfaction of the *Project Manager*.

The plant search and rescue (if applicable) must be undertaken and completed prior to any Site clearance or any other construction activity that may damage the vegetation can commences on Site.

The *Contractor* must appoint a sufficient number of named assistants to the CSHEO to monitor environmental issues e.g. litter, spills, illegal activities, fence patrol, dust etc. These appointments, along with details of the individuals being appointed and job descriptions, must be sent to the *Project Manager* for his approval.

During the construction period, the *Contractor* complies with the following:

A copy of the SES, and the relevant PES shall be available on Site, and the *Contractor* shall ensure that all the personnel on Site (including Subcontractors and their staff) as well as suppliers are familiar with and understand the specifications contained in the SES (as amended by the PES).

Method statements that are required during construction must be submitted to the *Project Manager* for approval at least 20 days prior to the proposed commencement of the activity. Emergency construction activity method statements may also be required. The activities requiring method statements cannot commence if they have not been approved by the *Project Manager*.

The method statements for Completion by the Contractor are contained within Annexure T2.2-08

Where applicable, the *Contractor* shall provide job-specific training on an *ad hoc* basis when workers are engaged in activities, which require method statements.

The *Contractor* shall ensure that any Materials delivery drivers are informed of all procedures and restrictions (e.g. which access roads to use, no go areas, speed limits, noise, etc) required by the CEMP before they arrive at Site and off load any Materials.

The *Contractor* shall be responsible for rehabilitating and re-vegetating all areas to the satisfaction of the *Project Manager* as detailed in the SES and PES.

The *Contractor* shall clear and clean the Site and Working Areas and ensure that everything not forming part of the *works* is removed from the Site and Working Areas and that all rehabilitation has taken place in accordance with the PES. An Environmental Closure Certificate from Environmental Department has been issued by the SHEC and signed off by the *Project Manager*.

The *Contractor* makes copies of the CEMP, SES and PES available at the offices of the *Contractor* on Site. The *Contractor* ensures that all personnel on Site (including Subcontractors) are familiar with and understand the requirements of the CEMP.

#### 1.4.1 The *Contractor* complies with the following SES:

The *Contractor* shall identify the kinds of environmental impacts that will occur as a result of his activities and then prepare separate method statements describing how each of those impacts will be prevented or managed so that the standards set out in this document are achieved. These method statements will be prepared in accordance with the requirements set out in the CEMP.

To ensure that environmental issues are taken into account in the establishment of the Site offices and all other facilities on Site.

#### 1.4.2 The *Contractor* complies with the CEMP, SES and PES. The *Contractor* abides by the instructions of the *Project Manager* regarding the implementation of the CEMP.

### 1.5 Quality assurance requirements

1.5.1 The *Contractor* shall have, maintain and demonstrate its use to the *Project Manager* (and/or the *Supervisor* to satisfy the requirements of paragraphs 7.4, 7.5, 3.2.1 and 3.2.8 as appropriate) the documented Quality Management System to be used in the performance of the *works*. The *Contractor's* Quality Management System shall conform to International Standard ISO 9001 (or an equivalent standard acceptable to the *Project Manager*).

1.5.2 The *Contractor* submits his Quality Management System documents to the *Project Manager* as part of his programme under ECC Clause 31.2 to include details of:

- Quality Plan for the contract;
- Quality Policy
- Index of Procedures to be used; and
- A schedule of internal and external audits during the contract

1.5.3 The *Contractor* develops and maintains a comprehensive register of documents that will be generated throughout the contract including all quality related documents as part of its Quality Plan.

1.5.4 The *Project Manager* indicates those documents required to be submitted for either information, review or acceptance and the *Contractor* indicates such requirements within his register of documents. The register shall indicate the dates of issue of the documents with the *Project Manager* responding to documents submitted by the *Contractor* for review or acceptance within the *period for reply* prior to such documents being used by the *Contractor*.

1.5.5 The Quality Plan means the *Contractor's* statement, which outlines strategy, methodology, resources allocation, QA and Quality Control co-ordination activities to ensure that the *works* meet the standards stated in the *Works Information*]

1.5.6 The Quality Policy means Project Quality Plan which satisfies the technical and quality requirements of the works, identifying all procedures, reviews, audits, controls and records used to control and verify compliance with the Works Information.

1.5.7 Please include the above default statements under paragraph 2.5 of the Works Information.

## 1.6 Programming constraints

1.6.1 The *Contractor* complies with the *Employer's* programme

1.6.2 The *Contractor* presents his first programme and all subsequently revised programmes (see ECC Clauses 31.2 and 32.1) in hard copy format

1.6.3 The *Contractor* shows on his Accepted Programme and all subsequently revised programmes schedules showing the critical path or paths and all necessary logic diagrams demonstrating sequence of operations.

1.6.4 The *Contractor's* programme shows duration of operations in working days [please state here or by cross-reference elsewhere in C3.1 *Employer's* Works Information to normal hours of a working days and what is a normal working week].

1.6.5 The *Contractor's* programme shows the following levels:

- Level 3 Project Schedule – detailed schedules generated to demonstrate all operations identified on the programme from the starting date to Completion. Individual operations will be assigned a code

1.6.6 The *Contractor* shows on each revised programme he submits to the *Project Manager* a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the *Contractor*.

1.6.7 The *Contractor* submits programme report information to the *Project Manager* intervals in addition to the intervals for submission of revised programmes stated under Contract Data Part One.

1.6.8 The *Contractor's* weekly programme narrative report includes:

- Level 4 Project Schedule – showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
- 3-week Look ahead Schedule - showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
- Manpower Histogram – reflecting actual, forecasted and planned activities
- S-curves – reflecting the actual percentage complete versus the planned percentage for the overall contract utilising the earned values as calculated by the detailed progress report.

1.6.9 The *Employer* (including the agents of the *Employer*) operates on Site during [either state specific calendar dates or timings when the *Contractor* has completed certain elements of the works etc].

1.6.10 Others [state specific third parties] operate on Site during [either state specific calendar dates or timings when the *Contractor* has completed certain elements of the works etc].

## 1.7 Contractor's management, supervision and key people

1.7.1 Insurance provided by the *Employer* is contained in the Contract Data – Part 1.

## 1.8 Contract change management

1.8.1 No additional requirements apply to ECC Clause 60 series.

## 1.9 Records of Defined Cost, payments & assessments of compensation events kept by Contractor

1.9.1 The *Contractor* keeps the following records available for the *Project Manager* to inspect:

- Records of Equipment used and people employed outside the Working Areas

## 1.10 The Contractor's Invoices

- 1.10.1 When the *Project Manager* certifies payment (see ECC Clause 51.1) following an assessment date, the *Contractor* complies with the *Employer's* procedure for invoice submission.
- 1.10.2 The invoice must correspond to the *Project Manager's* assessment of the amount due to the *Contractor* as stated in the payment certificate.
- 1.10.3 The invoice states the following:  
 Invoice addressed to Transnet SOC Ltd;  
 Transnet SOC Limited's VAT No: 4720103177;  
 Invoice number;  
 The *Contractor's* VAT Number; and  
 The Contract number :  
 The invoice contains the supporting detail :
- 1.10.4 The invoice is presented either by post or by hand delivery.
- 1.10.5 Invoices submitted by post are addressed to:  
 Invoices must be sent to:  
 Transnet Freight Rail  
 Central Accounting  
 15 Girton Road,  
 Inyanda House 2  
 Parktown  
 Tel:(011) 584 097

## 1.11 People

- 1.11.1 The *Contractor* complies with the following PIRPMP

### 7.3.2.1 CONTRACTOR LIABILITY

- 1.1. The *Contractor* warrants that it will be liable to Transnet for any loss or damage caused by strikes, riots, lockouts or any labour disputes by and/or confined to the *Contractor's* employees, which loss will include any indirect or consequential damages;
- 1.2. The *Contractor* warrants that no negotiations or feedback meetings by the *Contractor's* employees shall take place on Transnet premises, whether owned or rented by Transnet.
- 1.3. *The Contractor* shall give notice to Transnet of any industrial action by the *Contractor's* employees immediately upon becoming aware of any actual or contemplated action that is or may be carried out on Transnet's premises, whether owned or rented, and shall notify Transnet of all matters associated with such action that may potentially affect Transnet.
- 1.4. The *Contractor* is responsible for educating its employees on relevant provisions of the Labour Relations Act which deal with industrial action processes, and the risks of non-compliance.
- 1.5. The *Contractor* is required to develop a Contingency Strike Handling Plan, which plan the *Contractor* is obliged to update on a three monthly basis. The *Contractor* must provide Transnet with this plan and all updates to the Plan. The *Contractor* is responsible to communicate with its employees on site details of the plan.

## 2. INDUSTRIAL ACTION BY CONTRACTOR EMPLOYEES

- 2.1. In the event of any industrial action by the Contractor's employees, the Contractor is required to provide competent contingency resources permitted in law to carry out any of the duties that are or could potentially be interrupted by industrial action in delivering the Service.
- 2.2. The Contractor warrants that it will compensate Transnet for any costs Transnet incurs in providing additional security to deal with any industrial action by the Contractor's employees.
- 2.3. In the event of any industrial action by the Contractor's employees, the Contractor is obliged:
  - 2.3.1. To prepare and deliver to Transnet, within two (2) hours of the commencement of industrial action an Industrial Action Report. If the industrial action persists the Contractor is required to deliver the report at 8h30 each day.
  - 2.3.2. The Industrial Action Report must provide at least the following information:
    - 2.3.2.1. Industrial incident report,
    - 2.3.2.2. Attendance register,
    - 2.3.2.3. Productivity / progress to schedule reports,
    - 2.3.2.4. Operational contingency plan,
    - 2.3.2.5. Site security report,
    - 2.3.2.6. Industrial action intelligence gathered.
  - 2.3.3. The final Industrial Action Report is to be delivered 24 hours after finalisation of the industrial action.
  - 2.3.4. The management of the Contractor is required to hold a daily industrial action teleconference with personnel identified by Transnet to discuss the industrial action, settlement of the industrial action, security issues and the impact on delivery under the contract.
- 2.4. The resolution of any disputes or industrial action by the Contractor's employees is the sole responsibility of the Contractor.
- 2.5. Access to Transnet premises by the Contractor and its employees is only provided for purposes of the Contractor delivering its services to Transnet. Should the Contractor and its employees not, for any reason, be capable of delivering its services Transnet is entitled to restrict or deny access onto its premises and unless otherwise authorized; such person will be deemed to be trespassing.

## **PART 4: AFFECTED PROPERTY**

Core clause 11.2(2) states

“Affected Property is property which

is affected by the work of the *Contractor* or used by the *Contractor* in Providing the Service is in the documents which the Contract Data states it is in.”

In Contract Data, reference has been made to this Part 4 of the contract for the location of the Affected Property

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### **Description of the Site and its surroundings**

#### **1. General description**

Traction Transformer at Brakpoort and Hutchinson and 13 x distribution transformers in the section Beaconsfield, De Aar, Upington and Beaufort West

#### **2. Existing buildings, structures, and plant & machinery on the Site**

There are fixed assets that are situated alongside the linear state of the railway infrastructure. These structures are but not limited to; bridges, platforms, culverts and track side components. The Contractor shall ensure that all the works being carried out does not deform the existing structures.

#### **3. Hidden services**

There are underground services that were previously erected and the as-built data to locate such services will be utilised. There are situations where the as-built data cannot be traced and in such situations, activities must be carried out with caution. During the execution phases of the project, there is a possibility of disruption of such hidden services. These services include conduits (oil, water and sewage), electrical cables and any other structure that may be present. The employer shall inform the contractor of any possibilities in anticipation.

#### **4. Other reports and publicly available information**

The Employer will also provide maps and locations as and when required.

It can be necessary for the contractor to work in restricted area and or building and the contractor must ensure he complies with the regulations of Transnet in every way. Contractor and/or any sub-contractors shall be required to arrange with the Transnet Freight Rail Project Manager for permission to enter a restricted area. A list of workmen shall be given to the Manager to arrange for the necessary permits. 48 Hours minimum notice is necessary for the processing these permits but can be shorter in case of an emergency. This includes changes to staff during contract period.

## Annexures:

1. General Specification	
Repair works to a 132/25kV, 20MVA single phase traction transformer.	12 Pages
2. CEE_GI_012_ISS_2	23 Pages
3. BBB0347	1 Page
4. BBB0348	1 Page
5. BBB0349	1 Page

## General Specification

### Repair works to a 132/25kV, 20MVA single phase traction transformer.

#### 1.0 REFERENCE LIST

1.1 The following publications are referred to herein:

- 1.1.2 SANS 555. 1995: Insulating Oil for Transformer and Switchgear.
- 1.1.3 IEC 76 1993: Transformers
- 1.1.4 BSS 171 1987: Power Transformers
- 1.1.5 Transnet Freight Rail  
CEE.0045.90 Painting of steel components of electrical equipment.  
E.4E (April 1997). Safety Arrangements and procedural Compliance with the Occupational Health and Safety Act.  
CEE. GI 012 Supervision and Maintenance of oil in electrical equipment

#### 2.0 TENDERING

- 2.1 In order to evaluate the offers for the contract, Tenderers are requested to submit a breakdown of prices **per transformer** for the various items to be performed (**Bill of quantities per transformer attached**).
- 2.2 Transnet Freight Rail shall not disclose the successful tender's tender price or any other tender prices, as this is regarded as confidential information.
- 2.3 Transnet Freight Rail (hereafter refer to as TFR) reserves the right to inspect the tenderers facilities, plant and equipment prior to awarding the contract in order to ensure that it is suitable for the type of operations required.
- 2.4 The Tenderer must indicate if a sub contractor will be utilized to perform portions of the work and ensure that the sub contractor is competent in performing the duties.
- 2.5 The sub contractor may only be appointed by the main contractor if approval has been obtained from TFR.

#### 3.0 TENDER REQUIREMENTS.

- 3.1 The contractor shall conduct an inspection on site, to determine the actual site conditions namely the different access roads leading to the various substation sites, the condition of the access roads, overhead bridges and overhead transmission and communication lines, the nearest towns and possible suppliers of material and equipment to the site, the availability of water and electricity as well as the weather conditions.



- 3.2 The contractor will provide his own plant and equipment on site, (Oil filter plant, standby generators, security or any other plant and equipment required to execute the work safely)
- 3.3 The physical size and dimensions of the transformer and its associated parts. (See the attached file "25kV traction transformer.xls" as a reference, the transformer measurements and information provide must be verified by the contractor on site.)
- 3.4 The contractor shall submit a **schedule of the work to be performed** on each transformer. Included in his schedule shall be the costs as per the schedule of prices and a program for the complete repair work.
- 3.5 Contractor may only perform repair work on one transformer at a predetermined time till all work is completed and approved by TFR before repair work may commence on the next transformer.
- 3.6 The repair period per transformer will be negotiated between TFR and the contractor up to a maximum period of 3 weeks (21days). A penalty of R500.00 rand will be enforced should the contractor not adhere to the laid down time frames per transformer.
- 3.5 The contractor shall quote separate labour rates for work not specified in the schedule of prices.

#### 4.0 WORK TO BE PERFORMED ON THE TRANSFORMER.

##### 4.1 THE DISMANTLING OF THE TRANSFORMER COOLING FINS AND CONSERVATOR TANK WITH ALL ASSOCIATED BRACKETS.

- 4.1.1 Close the main transformer tank oil valves leading to the cooling fins and conservator tank. Drain the oil from the cooling fins and conservator tank in a suitable container. (Contractor to specify container and container PCB free)
- 4.1.2 Remove all the transformer cooling fins, all their attachment brackets and support brackets if applicable from the main transformer tank, place/stack the fins neatly on site. Ensure that all the valves and taps are properly closed. Fin oil entry holes to be closed to stop water and debris entering it during this time.(the transformer dimensions and weight is attached)
- 4.1.3 Specify the hydraulic crane lifting capacity at various reach distances. (Dated test certificates).
- 4.1.4 Remove the oil conservator tank with attachment and support brackets and place neatly on site. Ensure that all the valves and taps are properly closed to prevent oil leaks
- 4.1.5 The Contractor must provide details on all the lifting equipment to be utilized with inspection sheets and appropriate certificates together with operator's certificate of competence.

#### **4.2 THE TRANSPORTATION OF THE TRANSFORMER FINS AND CONSERVATORE TANK WITH ALL THE ATTACHMENT BRACKETS TO AND FROM SITE IF PREFERRED:**

- 4.2.1 The loading of the transformer cooling fins, the cooling fins must be properly stacked and secure, bolted together (Sandwich type arrangement), in easy manageable stacks. Ensure that no damage will occur during the transport of the cooling fins, to the repair site and during the off loading of the cooling fins at the repair site. Close the oil entry openings to keep moisture out.
- 4.2.2 The loading of the transformer conservator tank with all the associated brackets, and support brackets on the truck. Ensure that all the oil valves and taps are properly closed. The tank and support brackets must be properly secure to the truck before transportation.
- 4.2.3 Contractor to provide detail on all the lifting and transport equipment to be utilized with inspection sheets and appropriate certificates.

#### **4.3 TRANSFORMER CORE, CORE WINDINGS, WINDING INSULATION, ELECTRICAL CONNECTIONS AND MECHANICAL CONNECTIONS INSIDE THE MAIN TANK.**

- 4.3.1 Drain the oil from the transformer main tank completely.
- 4.3.2 Remove the High and Medium Voltage bushings and blank off openings. The bushings must be neatly stacked at an angle of 45°. ~~TFR will provide new Medium Voltage 52kV bushings to be fitted.~~ (Care to be taken not to damage the CT's on removal and re-fitment of the bushings)
- 4.3.3 Remove the transformer tank main lid to allow the Contractor and TFR staff to inspect the tap changer, core and core winding insulation and all exposed mechanical and electrical connections for damage
- 4.3.4 Remove any unwanted objects, repair any insulation damage and contact damage on the tap changer and re-torque the core bolts to the correct torque settings 135N.m. Repair all burnt or damage contacts, insulation damage, faulty terminations and faulty connections.
- 4.3.5 Re-insulate the HV and MV leads to the various bushings with paper tape eight layers per conductor.
- 4.3.6 This process should not exceed a time period of more than 24hrs to limit the exposure of the core and windings to the atmosphere. During this phase the transformer must be covered with a suitable cover which will prevent rain dust and any impurities form entering the main tank.
- 4.3.7 Megger test core insulation immediately after the cleaning and repair process these readings to comply to SANS standards



- 4.3.8 Refit the 132 kV and new 52kV bushings. (Care must be taken not to damage the CT's inside the transformer main tank.) Allow to replace or modify the studs to fit the old and new bushings if required.
- 4.3.9 Replace all the gaskets, seals and fill main tank with oil, vacuum the main transformer tank to the correct Torr.
- 4.3.10 Supply and fit new core/earth insulator on the outside of the main tank and replace this insulators cone rubber.
- 4.3.11 Check and service all earth connections.

#### **4.4 THE MEASUREMENT AND PROTECTION EQUIPMENT.**

- 4.4.1 Service oil and winding temperature pockets, fill with new oil, remove rust apply 1 coat NS4.
- 4.4.2 Repair all leaks to Bucholtz relay including the test valve and sight glass gaskets.
- 4.4.3 Service and secure and seal all control/ protection wiring inside the main tank before closing.

#### **4.5 THE TRANSFORMER COOLING FINS:**

- 4.5.1 Complete refurbish all the cooling fins, attachment support brackets, gaskets "Type TF 72", drain plugs, valves, O rings, washers and seals.
- 4.5.2 O Rings to be fitted to all the valve stem seals and dowty washers to be fitted to all the cooling fin drain plugs
- 4.5.3 The Contractor to remove all the rust and 30mm of the existing paint around the rust effected area, or any other form of corrosion or damage.
- 4.5.4 Do a spot repair on the rusted areas, remove all the rust and 30mm of the existing paint around the rust effected area, degrease the treated effected area, apply one coat NS4 red colour
- 4.5.5 Remove all lose paint (Specify method)
- 4.5.6 Clean the inside of the cooling fins of any carbon or sludge, air blast and rinse with new oil and pressure test each fin to ensure that no oil leaks will occur.
- 4.5.7 If hole or leaks are detected on the cooling fins, specify repair method to be utilised as not to damage or weaken the current mechanical condition of the cooling fin material.



- 4.5.8 Clean and degrease the outside of the cooling fin and paint the outside of the cooling fins complete with two coats of Noxide "Airless spray" as per specification CEE.0045.90. Painting of steel components of electrical equipment. An airless spray machine must be used – not a normal spray compressor.

#### 4.6 THE TRANSFORMER MAIN TANK:

- 4.6.1 Complete refurbishment of the transformer main tank with all associated equipment, drain valves and plugs, washers, O-rings, gaskets, temperature control box, Bucholtz pipes, and temperature probes.
- 4.6.2 Remove all the rust or any other form of corrosion from the main tank, the rusted area as well as an additional 30mm of the existing paint surrounding the rusted area, degrease the treated effected area, apply one coat NS4 red colour.
- 4.6.3 Clean the tank "degrease" and repaint the outside of the tank with two coats Noxide "Airless spray or hand brush" as per specification CEE.0045.90. Painting of steel components of electrical equipment.
- 4.6.4 All the gaskets must be replaced with type TF 72 of same thickness. Size 10mm gasket on the main lid. The stop and drain valves, drain plugs, washers and O-rings must be replaced. Fit new dowty washers to drain plugs on all the fins.
- 4.6.5 Allow for the replacement of all broken or missing bolts and nuts as well as the bushing studs (16mm)
- 4.6.6 Raise the transformer main tank from the plinth if applicable, secure the main tank, remove all the rust or any other form of corrosion from the main tank, the rusted area as well as an additional 30mm of the existing paint surrounding the rusted area, degrease the treated effected area, apply one coat NS4 red colour. Clean the tank "degrease" and repaint the outside of the tank with two coats of Noxide "Airless spray or hand brush" as per specification CEE.0045.90. Painting of steel components of electrical equipment. Fit malthoid 3 layers and lower the main tank back into existing position.

#### 4.7 THE CONSERVATOIL TANK WITH SUPPORTING BRACKETS:

- 4.7.1 Complete refurbishment of the transformer conservator tank. Remove all the rust and or any other form of corrosion, with 30mm of the existing good paint surrounding the rust effected areas, degrease the treated effected area, and apply one coat NS4 red colour. Lift the conservator off its stand and mounting brackets, de-rust and paint these areas and fit a 6mm type 72 packing on this bracket and re secure same.

- 4.7.2 Clean the tank "degrease" and repaint the inside of the tank with NS4/gliptol and degrease outside of the tank and supporting brackets and paint with 2 coats of Noxide by means of "Airless spray" as per specification CEE.0045.90. Painting of steel components of electrical equipment.
- 4.7.3 Pressure test the conservator tank to ensure that no oil leaks will appear.
- 4.7.4 The inside of the conservator tank must be sandblasted and clean and be painted with gliptol or be replaced with a 3CR12 S/Steel tank
- 4.7.5 All the gaskets must be replaced with type TF72 and all the stop valves refurbish and washers, O rings are replaced.
- 4.7.6 Supply and install new site glasses and site glass housings where required.

#### 4.8 **THE COMPLETE REASSEMBLY OF THE TRANSFORMER:**

- 4.8.1 Re-gasket the transformer with type TF 72, 10mm thick for the main lid (torque main lid bolts 55Nm) and 6 mm for the rest of the gaskets
- 4.8.2 Fit the cooling fins to the main transformer complete with new gaskets and torque all bolts and nuts to the minimum specified torque settings for the appropriate bolts.
- 4.8.3 Install new fin support brackets, hot dip galvanised and painted as per specification CEE 0045.90 two coats. Tension the support bracket rod to ensure an even distribution of the oil fin loads.
- 4.8.4 Fit the conservator tank with all attachment brackets
- 4.8.5 Services oil, and winding temperature gauges and Bucholtz relay.
- 4.8.6 Fill the transformer with the existing oil under a vacuum process.
- 4.8.7 Top up the transformer with virgin oil " Conservator tank sight glass indication" and filter the transformer oil a minimum of 3 passes to ensure a 65kV dielectric strength and a water content of less than

#### 4.9 **GENERAL REPAIRS AND REQUIREMENTS.**

- 4.9.1 Allow for the replacement of studs, nuts and bolts with equal quality studs, bolts and nuts as and when required. Welding of stud may be required (Provision)
- 4.9.2 Secure all cables and pipes

- 4.9.3 Overlap the gasket joints (Lap joint) to ensure that no oil leaks will appear.
- 4.9.4 Draw a vacuum. Fill the transformer with the existing transformer oil PCB free under vacuum condition.
- 4.9.5 Check all gaskets, valves, stop taps for any oil leaks, and repair if leaks are identified.
- 4.9.6 Filter the transformer oil, a minimum of 4 passes at 70 degree Celsius under a vacuum of 5 Torr. Contractor to supply their own generator and filter plant.
- 4.9.7 Re-torque all bolts and nuts after a four month period from completion

## 5.0 SERVICE CONDITIONS

The transformer must perform to its rated design after testing for continuous operation for a period of 24 hours to ensure no damaged was cause to the transformer during transport.

## 6.0 DRYING THE TRANSFORMERS IF REQUIRED

- 6.1 The following methods of drying out the transformer may be used:
  - 6.1.1 The vapour phase process.
  - 6.1.2 The oven dry process.
  - 6.1.3 The vacuum dry out process
- 6.2 Tenderers who offer a vapour phase process to clean and dry transformers must ensure that the process does not cause any deterioration on the aged insulation.
- 6.3 For the vapour phase process the moisture level shall be less than 1, 0 percent.
- 6.4 The tendered shall indicate what dry-out process is to be implemented and the method used to determine the specified moisture level.

## 8.0 INSULATING OIL

- 8.1 TFR will make the last test results of the transformer oil available to the contractor.
- 8.2 The contractor shall ensure that the mineral insulating oil used for topping up the requirements specified in SABS 555.1995. and be PCB free. **Top up oil to be supplied by contractor.** Top up level as indicated by conservator sight level indicator at 21degree C. Use virgin oil.

- 8.3 TFR will make a test certificate available concerning PCB contamination before the disassembling of the transformer may proceed, to ensure that it is within the maximum allowable specification.
- 8.4 The contractor shall arrange via the "Contract Manager" to have oil samples taken from the transformer when it is filled and filtered on site. The oil samples shall be taken by the Maintenance Electrical Protection Staff for tests to ensure that the oil complies with the specified requirements of SABS 555.1995 before the transformer is energised and placed on load.

## **9.0 TESTS ON REPAIRED TRANSFORMER**

- 9.1 The power transformer shall withstand the routine tests specified in specification IEC 76.1993 or BSS 171.1987 which ever one is applicable. The cost for the tests shall be included in the tender.
- 9.2 The previous test results will be made available to all Tenderers
- 9.3 The contractor shall submit test certificates of the test results to the TFR staff witnessing the tests and to the "Contract Manager".

## **10.0 INSPECTION**

- 10.1 TFR reserves the right to be present during the transport, repair work and testing and must be timeously advised of the dates of commencement of the repair work and of testing.
- 10.2 Arrangements must be made timeously via the "Contract Manager" for the TFR protection staff, to witness and authorise the tests for the transformer repaired.
- 10.3 Each phase of the repair work must be inspected and approved by TFR before the next phase may proceed.
- 10.4 Calibration certificates less than 12 months old issued by a recognised authority for all instruments to conduct tests on transformers shall be available for inspection, if requested by TFR.

## **11.0 CORROSION PROTECTION AND PAINT FINISH**

- 11.1 All exterior metal surfaces of the transformer, and associated apparatus, damaged during the transportation of the transformer and subject to corrosion, shall be prepared for corrosion-proofing and painted in accordance with the practice

recommended in SABS 064.1979 and as specified in TFR's Specification No. CEE.0045.90

- 11.2 The transformer base must be inspected for rust and any defects to the metal surface. All the defects detected must be repaired before the placing of the transformer.
- 11.4 All external surfaces shall be finished with an acceptable outer coat colour to match the existing finish.

## **12.0 PACKING**

- 12.1 The transformer fins and conservator tank shall be loaded in such a manner that it shall not sustain damage during handling and transportation, and precautions shall be taken to ensure that moisture cannot enter the equipment.
- 12.2 The transformer fins and conservator tank transport to the new site, filling with oil under vacuum and filter process must be a continuous operation with no break in the process to ensure that no moisture enters the transformer.
- 12.3 The contractor will specify the safe method and equipment utilising for raising and lowering of the transformer main lid, fins and conservator tank on to and from the truck. (Safe working statement)
- 12.4 The rating of the crane and jacks to be used for the lifting and lowering process must be specified in the tender documents and exceed the load of the equipment.

## **13.0 GUARANTEE**

- 13.1 The contractor shall guarantee the transformer against faulty workmanship for a period of twelve months from the date the transformer has been energised.
- 13.2 The "Contract Manager" shall notify the contractor in writing of the date when the transformer shall be energised.

## **14.0 CERTIFICATE OF ACCEPTANCE**

- 14.1 The issuing of an inspection certificate will be authorised by the Quality Assurance Section of Transnet Freight Rail after final acceptance of the transformer.

## **15.0 QUALITY ASSURANCE**

- 15.1 The Tenderer shall indicate at the tendering stage what steps have been taken to implement a Quality System in terms of ISO 9002 and shall submit a Quality Plan.

## **16.0 SAFE WORKING ON TRANSNET FREIGHT RAIL SUBSTATION SITES**

- 16.1 The contractor or his sub-contractor shall be required to work on site in accordance with TFR safety specification E4E of April 1997 and the Occupational Health and Safety Act 85 of 1993.
- 16.2 The contractor shall be required to work under direct supervision of TFR's appointed "Electrical Officer and Technical officer Contracts" on site and shall work only in the area which shall be demarcated by suitable barriers if required.
- 16.3 The contractor must submit a written safe working statement on the work to be performed including a fall protection plan before any work may commence.
- 16.4 The contractor must appoint a competent supervisor on site who must always be present during the construction work.
- 16.5 The contractor must ensure that all the production staff are trained and certified to perform the duties required to execute the work.
- 16.6 The contractor must ensure that all the staff under his control holds a medical certificates to prove that they are fit to perform the work
- 16.7 The contractor must ensure that all the sub contractors, riggers and scaffold erectors are certified and that all scaffold work is inspected and certified accordingly by an inspector.
- 16.8 The contractor must ensure that the correct slings and chains are utilised, and that the equipment inspection sheets and certificates are made available on site in the safety file.
- 16.9 No work may commence before all the mentioned appointment letters, medical certificates, written safe working statement and all legal documents are submitted in a safety file to the Contract Manager.
- 16.10 The complete safety file must be made available within three weeks of notification that the contract has been awarded failure to deliver the file in time will let to the cancellation of the contract.

## **17.0 RISK AND POSSIBLE HAZARDS CONDITIONS**

- 17.1 Hazardous materials to be properly stored (Petrol, diesel and cleaning materials).
- 17.2 No work may be done under live conditions.
- 17.3 The contractor must ensure that all the transformer oil containers are in good order and that no oil spills will occur.
- 17.4 Transformer oil is highly flammable and no welding may take place that might ignite the transformer oil.
- 17.5 All the transformer oil containers and the filter plan must be certified PCB free.
- 17.6 No work may commence during lightning conditions.
- 17.7 The contractor must arrange his own safety staff to protect his plant and equipment

## **18.0 INSURANCE**

- 18.1 The contractor will arrange insurance for all his plant and equipment utilized on site. The contractor will provide liability insurance to cover any incident or claim that may arise during the contract execution period.
- 18.2 The contract must also arrange for insurance cover for possible oil spills on site and during transport from or to the transformer repair sites.

## **19.0 PENALTIES**

- 19.1 The contractor will provide a safety file with all relevant documents namely; appointment letters, written safe working statement, medical certificates, good standing with the compensation commissioner, appointment of competent supervisors, site instruction book, site diary, fall protection plan etc within 2 weeks of appointment and ensure that their site diary is present at all times..
- 19.2 Failure to provide the mentioned documentation will automatically led to the cancellation of the contract.
- 19.3 The following penalties will apply or part thereof for any delays, i.e. R500 per day up to a maximum of 12% of the contract amount according to the scheduled energising date after commissioning at the substation.



Contractor labour rates	
Highly Skilled	
Skilled	
Semi Skilled	
Unskilled	

**SPOORNET  
(INFRASTRUCTURE) (ELECTRICAL)**

DISTRIBUTION	ENGINEERING INSTRUCTION	GENERAL
A, B	SUPERVISION AND MAINTENANCE OF INSULATING OILS IN ELECTRICAL EQUIPMENT	GI.012 ISSUE 2

INDEX

CLAUSE	CONTENTS	PAGE NO
1.0	SCOPE	3
2.0	STORAGE OF OIL IN DRUMS	3
3.0	PUMPING OF OIL	3
4.0	FILTERING TO RESTORE DIELECTRIC STRENGTH OF OIL	3
5.0	TRANSFORMER DRY-OUT	4
6.0	RECLAIMING OR REPLACING OF OIL	5
7.0	TRANSFORMER DE-SLUDGE	5
8.0	PREVENTION OF OIL CONTAMINATION IN TRANSFORMERS BY MOISTURE	6
9.0	SWITCH-GEAR	7
10.0	OIL COOLED RECTIFIERS	7
11.0	OIL TO BE TESTED BEFORE USE	7
12.0	ROUTINE TESTING OF OIL	7
13.0	OIL PROPERTIES TO BE TESTED FOR	8
14.0	PERMISSIBLE LIMITS FOR PROPERTIES TESTED	10
15.0	ENVIRONMENTAL PRECAUTIONS	11
16.0	ASSOCIATED DOCUMENTS	11
17.0	AMENDMENTS	13

**PAGE : 1**  
**DATE : AUGUST 1994**  
**REF. : SI(W) 2/4/1/6/2/GI.012**

INDEX

APPENDICES	CONTENTS
APPENDIX 1	PROCEDURE TO BE FOLLOWED FOR SAMPLING OF ELECTRICAL INSULATING OIL
APPENDIX 2	PROCEDURES TO BE FOLLOWED FOR ROUTINE TESTING OF ELECTRICAL INSULATING OILS
APPENDIX 3	MAXIMUM PERMISSIBLE WATER CONTENT OF OIL IN TRANSFORMERS VERSUS TEMPERATURE OF TOP OIL SAMPLE UNDER EQUILIBRIUM CONDITIONS
APPENDIX 4	PROCEDURE TO BE FOLLOWED FOR PREPARATION OF CHEMICALS FOR OIL TESTING

1.0 SCOPE

Note: All references to "oil" in this instruction shall mean mineral insulating oil.

1.1 This instruction covers the procedure for storage, handling, testing and maintenance of oil used in electrical equipment.

1.2 This instruction does not cover insulating liquids containing Polychlorinated Biphenols (PCB). These are toxic and should be handled strictly in accordance with Engineering Instruction G.009.

1.3 This instruction does not cover other synthetic dielectric fluids which should be maintained as per suppliers instructions.

2.0 STORAGE OF OIL IN DRUMS

2.1 Drums of insulating oil shall be stored indoors, or under cover.

2.2 Drums shall be stored upside down, i.e. with bungs at the bottom.

2.3 Before use, oil stored in drums shall be tested for compliance with clause 14.1.1 (Dielectric strength).

3.0 PUMPING OF OIL

3.1 When pumping oil into electrical equipment, the following precautionary measures shall be taken:

3.1.1 A 0,5 micron paper filter shall always be installed between the pump and the equipment.

3.1.2 Pumps shall not have metal-to-metal friction which can release conductive metal particles into the oil.

4.0 FILTERING TO RESTORE DIELECTRIC STRENGTH OF OIL

Note: It is not possible to reduce the acidity of insulating oil by filtration. Therefore, if the acidity exceeds the permissible upper limit laid down in clause 14.1.2 the oil must be reclaimed, or replaced (See clause 6.0).

4.1 To maintain a high dielectric strength it is important that the oil should be free of impurities such as water and solid particles.

4.2 To restore dielectric strength to a permissible level as per clause 14.1.1, one of the following methods shall be used to remove moisture and solid particles from the oil:

4.2.1 Heat-vacuum process

4.2.1.1 This method requires an external heating system, with a suitable oil filter for removal of solid particles and a vacuum-type drier capable of providing a vacuum of 5 mm Hg (5 mm Hg = 5 Torr).

PAGE : 3

DATE : AUGUST 1994

REF. : SI(W) 2/4/1/6/2/GI.012

4.2.1.2 The advantage of the vacuum process in contrast to heat alone, lies in the de-gasification effect, which removes dissolved water and other gasses from the oil. This does not occur with other methods of filtering the oil.

4.2.2 Cartridge filter press

The traditional filter press or cartridge filter cannot remove dissolved water from the oil but is effective in removing solid impurities and thereby improving the dielectric strength.

Note: Only plants of the heat-vacuum type shall be purchased in the future due to the shortcomings of the traditional filter presses as mentioned above.

5.0 TRANSFORMER DRY-OUT

Note: In the event of the acidity of oil being in excess of the permissible level (clause 14.1.2) the oil shall be reclaimed or replaced as per clause 6.0 prior to proceeding with the dry-out process.

5.1 Any moisture present in the transformer will be partly in the oil and partly deposited in the layers of insulation. It has been established that more than 95 percent of moisture in a transformer is trapped in the insulation, and less than 5 percent in the oil.

5.2 To determine the water content of oil in a transformer, the test method as described in Appendix 2, clause 3.2 shall be used. Should the water content exceed the values indicated in Appendix 3, one of the following procedures shall be used to remove the water from the transformer:

5.2.1 Transformer on site and de-energised

5.2.1.1 This procedure requires a filter with vacuum-type drier plus a heater, as per clause 4.2.1.1. This is a slow process due to the slow rate of diffusion of moisture between the insulation and the oil. Depending on the amount of moisture present in the core, this process can take up to 6 weeks to complete.

5.2.1.2 The effectiveness of the dry-out process can be monitored by measuring the rate of water extraction by the plant. During filtration the oil shall be tested periodically and the dry-out process terminated when the moisture content of the oil leaving the transformer is not more than 3 parts per million (ppm). A check must be carried out 2 weeks after termination of the process to ensure that moisture content is still within permissible levels as per Appendix 3.

5.2.1.3 Should the withdrawal of a transformer from service for lengthy periods be undesirable, the alternative method as per clause 5.2.2 should be considered.

5.2.2 Transformer on site and on load

This method requires an on-load filtration plant, using Fullers earth as filter medium and which is equipped with suitable safety devices. Depending on the amount of water present, the dry-out process can last from 8 to 20 weeks. On site dry-out with a transformer on load can only be carried out by suitably qualified contractors.

5.2.3 Oven dry-out

If the dry-out is being done in a workshop, the core may be removed from the tank and dried in an oven. Larger units may be dried in their tanks inside a suitable enclosure.

Note: During dry-out the temperature of the transformer shall not exceed 140 degrees Celsius to prevent degradation of the insulation.

6.0 RECLAIMING OR REPLACING OF OIL

Note: In the event of the acidity of the oil being in excess of the permissible level (clause 14.1.2) the oil shall be reclaimed or replaced.

6.1 Reclaiming is a process which uses Fullers earth as a medium to remove the acidic and colloidal contaminants and other products of oil deterioration from the oil. This process produces clean dry oil which complies with the specification for new oil.

6.2 The choice of whether oil should be reclaimed or replaced with new oil shall depend upon practical and economic considerations for a given situation.

6.3 Reclaiming of oil can either be carried out on site, with the transformer/equipment de-energised or alternatively in the factory or workshop. On site reclaiming is carried out using specialised equipment and can only be carried out by suitably qualified contractors. See Specification CEE.0229 to be used for contract purposes

6.4 Oil that has been reclaimed or replaced shall be tested after 6 months and should the acidity have increased by more than 0,03 mg Potassium Hydroxide (KOH)/g oil, the transformer shall be de-sludged as described in clause 7.0.

7.0 TRANSFORMER DE-SLUDGE

7.1 Transformers must be desludged as soon as the permissible sludge limit as per clause 14.1.3 is exceeded; or when accelerated deterioration sets in after reclaiming or replacing the oil as per clause 6.4.

PAGE : 5

DATE : AUGUST 1994

REF. : SI(W) 2/4/1/6/2/GI.012

- 7.2 This procedure has two requirements to accomplish effective de-sludging of a transformer:
  - 7.2.1 The oil must be heated to the temperature at which the sludge will dissolve (i.e. 72 degrees Celsius to 82 degrees Celsius).
  - 7.2.2 The oil must be clean.
- 7.3 The sludge deposited on the interior of the transformer will, in the presence of the clean hot oil, go from a solid into a solution, re-entering the oil. This oil is then filtered through Fullers earth where the dissolved sludges are stripped out by adsorption and the clean oil is returned to the transformer.
- 7.4 For successful de-sludging the hot oil must penetrate into all parts of the transformer, i.e. the insulating paper, the cooling radiators, through the cooling ducts and in between the windings. The transformer must be subjected to multiple passes of hot oil throughout the entire structural system, so that the sludge is exposed to the hot oil for sufficient time in order to effectively remove the sludge from the inside of the transformer. The complete de-sludging process normally requires 40 to 80 re-circulations of hot oil through the transformer.
- 7.5 This process requires specialised equipment, and can at present only be carried out by suitably qualified contractors. The process is carried out only on site with the transformer energised. See Specification CEE.0229 to be used for contract purposes.
- 8.0 PREVENTION OF OIL CONTAMINATION IN TRANSFORMERS BY MOISTURE
  - 8.1 To avoid moisture contamination of oil in transformers fitted with dehydration type breathers, the silica-gel charge shall be replaced when approximately 50 percent of crystals have turned pink.
  - 8.2 Inspection vents, caps or plugs on the conservator tank and breathers shall at the same time be checked for leaks.
  - 8.3 The following precautions must be taken when replacing gaskets on a transformer tank:
    - 8.3.1 The work is to commence as soon as possible after de-energising the transformer so that the oil is as hot as possible when the tank is opened to atmosphere.
    - 8.3.2 The tank is to be sealed overnight and a vacuum is to be drawn, if possible.
    - 8.3.3 The work is to be completed without undue delay.

9.0 SWITCH-GEAR

9.1 Routine tests shall be carried out on switch-gear oil in accordance with clause 12.2 and should the test be failed, the oil shall be filtered or replaced.

9.1.1 In the case of oil filtering, the appropriate procedure described in clause 4.0 shall be used.

9.1.2 After filtration, the oil shall be re-tested.

9.1.3 On complete overhaul of switch-gear, the oil shall be filtered or replaced with new oil.

10.0 OIL COOLED RECTIFIERS

10.1 No tests are prescribed for oil in oil cooled rectifiers.

10.2 In the event of flash-overs occurring inside the rectifier, the oil shall be replaced.

11.0 OIL TO BE TESTED BEFORE USE

11.1 New oil in tanks and drums shall be tested for dielectric strength before use, as per Appendix 2, clause 2.0.

11.2 Oil in equipment that has been decommissioned for longer than 3 months shall be tested for dielectric strength and water content in accordance with Appendix 2, clauses 2.0 and 3.0 before commissioning.

11.3 The results shall be recorded in the test book used by electrical laboratory personnel. See Engineering Instruction GI.008.

12.0 ROUTINE TESTING OF OIL

12.1 Oil in transformers shall be tested as per Appendix 2 on a routine basis as follows:

12.1.1 A schedule for tests shall be drawn up. The intervals between tests shall be determined in accordance with the operating conditions of the individual equipment, but shall not exceed the following:

12.1.1.1 Transformers of 500 kVA and greater, 4 yearly except dissolved gas analysis (DGA).

12.1.1.2 Dissolved gas analysis must be performed annually on all traction transformers above the age of 25 years. In addition, all transformers classified as strategic, as recommended in section 5 of publication CEE EP.005 (Condition Monitoring of Network Transformers), must be monitored on an annual basis. If the gas content exceeds the limits as per clause 14.1.5, more regular monitoring should take place as specified in the same clause.

PAGE : 7

DATE : AUGUST 1994

REF. : SI(W) 2/4/1/6/2/GI.012

- 12.1.1.3 Should sufficient historical data on transformer failures be available, economic and risk analysis must be carried out on all transformers other than traction, before a routine DGA is introduced. If justified, DGA should be carried out annually.
- 12.2 Oil in switch-gear shall be tested annually for dielectric strength in accordance with Appendix 2, clause 2.0.
- 12.2.1 In the event of switch-gear not having operated during the 12 months since the last test, the test may be postponed for another year.
- 13.0 OIL PROPERTIES TO BE TESTED FOR
- 13.1 Dielectric strength
- 13.1.1 This test serves to indicate the presence of conductive contaminants such as free water, dirt, cellulosic fibres, filter dust, metallic cuttings or splinters but not dissolved water under 80 percent saturation, acids, or sludge.
- Note: A good dielectric strength (i.e. 35 kV or higher) can disguise a dissolved water problem.
- 13.1.2 This test shall be carried out as per Appendix 2, clause 2.0 and the oil shall be deemed acceptable if complying to the limits as per clause 14.1.1.
- 13.2 Neutralisation number (Acidity)
- 13.2.1 The neutralisation number of an oil is a measure of the acid content of the oil. It may be used as a guide for determining when oil should be replaced or reclaimed.
- 13.2.2 The acid content is expressed as the number of milligrams of potassium hydroxide (KOH), a base, that is required to neutralise the acid in a one gram sample of oil. Appendix 2, clause 4.0 describes the test method and is used for both new and used oil.
- Note: This method is not very sensitive and cannot be used for determining neutralisation numbers below 0,005 mg KOH/g oil (effect of one drop of 0,1 N mg KOH/g oil). A more accurate method for determining neutralisation number below 0,005 is to use potentiometric titration equipment and involves specialised laboratory procedures.
- 13.2.3 The results of routine tests carried out on a particular item of equipment shall be plotted in graphical form. The neutralisation number should increase linearly with time within the accuracy of the test method used. Should a significant non-linearity occur in the graph the test shall be repeated and if confirmed as correct, the office of the Chief Engineer (Electrical) must be consulted for further action to be taken. The neutralisation number shall in any event not be allowed to exceed the value given in clause 14.1.2.

- 13.3 Dissolved gas analysis
- 13.3.1 Faults caused by partial electrical discharges or localised overheating and arcing inside the transformer leads to decomposition (breakdown) of the oil and insulation materials (paper, barrier board, resin, etc.). This decomposition of insulation causes gas generation which will generally dissolve in oil.
- 13.3.2 The Buchholtz relay is a gas collector relay in the transformer and operates on a large release of gas or on the accumulation of approximate 250 cc volume gas. However, it does not respond to breakdowns which produce gas at a very slow rate.
- 13.3.3 The technique of gas-chromatography has been developed which makes it possible to separate a mixture of gases dissolved in oil to identify the various types of gases present. If the gases are generated slowly, they are quantitatively dissolved in the oil and if these faults are not discovered, they can slowly attack the insulation to a point where serious damage results to the transformer. For this reason there is a general trend, especially with larger transformers, to monitor the oil for degenerated gases in the solution. The amounts and quantity of gases in the oil can identify the severity and type of faults. The magnitude of the normal concentrations of gas depends on the age and loading of the transformers but limiting values for the concentrations for various decomposition gases can be determined empirically. The permissible concentrations of various types of gases are given in clause 14.1.5.
- 13.3.4 In the event of Buchholtz relay operation, it is recommended that oil samples be taken for dissolved gas analysis, rather than analysing the trapped gas in the relay.
- 13.3.5 The dissolved gas analysis can only be done by suitably equipped laboratories providing this service.
- 13.4 Water content
- 13.4.1 Moisture in oil may emanate from either the atmosphere via the breather or leaking gaskets, or is produced by deterioration of paper and oil in transformers and equipment.
- 13.4.2 Water, even in minute quantities is harmful in power equipment because it is attracted to the places where electrical stress is highest. Concentration of moisture in those areas may result in ultimate failure of the insulation.
- 13.4.3 Water also accelerates the deterioration of the insulating material (paper etc.) and more water is produced during this process. This is a continuous cycle and once the paper has been degraded it can never (unlike the oil) be returned to its original condition.

13.4.4 It is therefore essential that the moisture content of the oil in transformers be measured accurately, using the Karl Fischer method as per Appendix 2, clause 3.0. The maximum permissible moisture content is shown in Appendix 3.

13.5 Sludge

13.5.1 Oil in service is subject to deterioration due to oxidation reactions which are accelerated by elevated temperature and the presence of metals or organometallic compounds or both, acting as oxidation promoters. Change in colour, formation of acid compounds and at an advanced stage of oxidation, separation of sludge may occur which in turn will result in the dielectric properties being impaired.

13.5.2 The sludge content of oil must be tested according to the method described in Appendix 2, clause 5.0. Where sludge is detected (see clause 14.1.3) the oil must be reclaimed or replaced as per clause 6.0 and the transformer must be desludged.

Note: Precipitable sludge occurs only when oxidation is sufficiently advanced. Experience shows that the sludge test is not needed as long as the neutralisation number (NN) is below 0,4 mg KOH/g oil.

14.0 PERMISSIBLE LIMITS FOR PROPERTIES TESTED

14.1 The following values for the various tests shall be considered as being the permissible limits.

14.1.1 Dielectric breakdown strength:  
New oil - not less than 35 kV.  
Oil in service - not less than 30 kV.

14.1.2 Neutralisation number (acidity):  
New oil - not more than 0,03 mg KOH/g oil.  
Oil in service - not more than 0,50 mg KOH/g oil.

Note: The neutrality number for new oil may be increased to 0,05 mg KOH/g oil when phenolphthalein indicator is used instead of alkali blue.

14.1.3 Sludge content:  
Oil in service - not more than 0,02 percent.

Note: A sludge test must be carried out only when the neutralisation number (NN) exceeds 0,4 mg KOH/g oil.

- 14.1.4 Water content:  
 New oil - Not more than 10 ppm.  
 Oil in service - See Appendix 3.

Note: Dielectric strength, neutralisation number, sludge and water content values are based on IEC 422, tables 1 and 2.

14.1.5 Dissolved gas analysis (DGA)

If any one of the gas concentrations indicated in the first column below is exceeded, the gas analysis must be performed every six months and every three months for the concentrations indicated in the second column:

	6 monthly level	3 monthly level
Hydrogen	150 ppm	1 000 ppm (V/V)
Methane	25 ppm	80 ppm (V/V)
Ethane	10 ppm	35 ppm (V/V)
Ethylene	20 ppm	100 ppm (V/V)
Acetylene	15 ppm	70 ppm (V/V)

Where: ppm (V/V) = parts per million volume / volume of specific gas in oil.

Note: The above values are based on DE GRIJP M.H.B.(Dissolved Gas Analysis and its interpretation).

- 14.1.5.1 The transformer must be de-energised when the average total gas content (including CO and CO<sub>2</sub>) increases at a rate of more than 10 percent per month, or when recommended by the laboratory.

15.0 ENVIRONMENTAL PRECAUTIONS

When mineral oil has to be disposed of, certain precautions are necessary to avoid risk of environmental pollution, and legal requirements may apply. Normally, if the precautions and regulations applicable to the handling and disposal of industrial and other lubricants (e.g. automobile crank case oil) are applied to mineral insulating oils, no problems should arise. See Guide to Legislation Concerning Hazardous Substance Act (Act 15 of 1973) and the Environmental Conservation Act (Act 73 of 1989).

16.0 ASSOCIATED DOCUMENTS, SPECIFICATIONS, ENGINEERING INSTRUCTIONS AND APPENDICES

- 16.1 The following documents are referred to in this instruction:

- 16.1.1 Guide to Legislation Concerning Hazardous Substance Act (Act 15 of 1973).

- 16.1.2 DE GRIJP M.H.B. Dissolved Gas Analysis and its interpretation, Hogeschool West-Brabant, Sector Technical Science, Department Electrical Heavy Current, Report 1. October 1989 - Transformer Department ESKOM.
- 16.1.3 The Environmental Conservation Act (Act 73 of 1989).
- 16.1.4 Condition Monitoring of Network Transformers, CEE EP.005.
- 16.2 The following specifications are referred to in this instruction:
  - 16.2.1 ASTM D 1553/79: Standard Test Method for Water in Insulating Liquids. (Karl Fischer Method).
  - 16.2.2 BS 148 : Unused Mineral Insulating Oils for Transformers and Switch-gear.
  - 16.2.3 CEE 0229: Reclamation of Insulating Oil and De-sludging of Transformers.
  - 16.2.4 IEC 156: Method for the Determination of the Electric Strength of Insulating Oils.
  - 16.2.5 IEC 422: Supervision and Maintenance Guide for Mineral Insulating Oils in Electrical Equipment.
  - 16.2.6 IEC 567: Guide for the sampling of gases and oil from oil-filled electrical equipment and for the analysis of free and dissolved gases.
- 16.3 The following Engineering Instructions are referred to in this instruction:
  - 16.3.1 G.009: Electrical Equipment Containing Askarels (Polychlorinated Biphenyls).
  - 16.3.2 GI.008: "Toerusting wat in Elektriese Substasies en algemene Masjienkamers voorsien moet word".
- 16.4 The following appendices form part of this instruction:
  - 16.4.1 APPENDIX 1: Procedure to be Followed for Sampling of Electrical Insulating Oil.
  - 16.4.2 APPENDIX 2: Procedures to be Followed for Routine Testing of Electrical Insulating Oils.
  - 16.4.3 APPENDIX 3: Maximum Permissible Water Content of Oil in Transformers Versus Temperature of Top Oil Sample Under Equilibrium Conditions.
  - 16.4.4 APPENDIX 4: Procedure to be Followed for Preparation of Chemicals for Oil Testing.

- 17.0 AMENDMENTS
- 17.1 This instruction has undergone a general change in format.
- 17.2 Reference to Dissolved Gas Analysis (DGA) made throughout instruction.
- 17.3 This instruction supersedes Engineering Instruction GI.012 (Issue 1) of August 1992.

END



CHIEF ENGINEER (INFRASTRUCTURE)  
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<b>DISTRIBUTION</b>	<b>ENGINEERING INSTRUCTION</b>	<b>GENERAL</b>
<b>A, B</b>	<b>SUPERVISION AND MAINTENANCE OF INSULATING OILS IN ELECTRICAL EQUIPMENT</b>	<b>GI.012 ISSUE 2 APPENDIX 1</b>

PROCEDURE TO BE FOLLOWED FOR SAMPLING OF ELECTRICAL INSULATING OIL

1.0 SAMPLING INSULATING OIL:

Note: The oil sampling procedure is of the utmost importance, as incorrect sampling can result in wrong analysis/diagnosis.

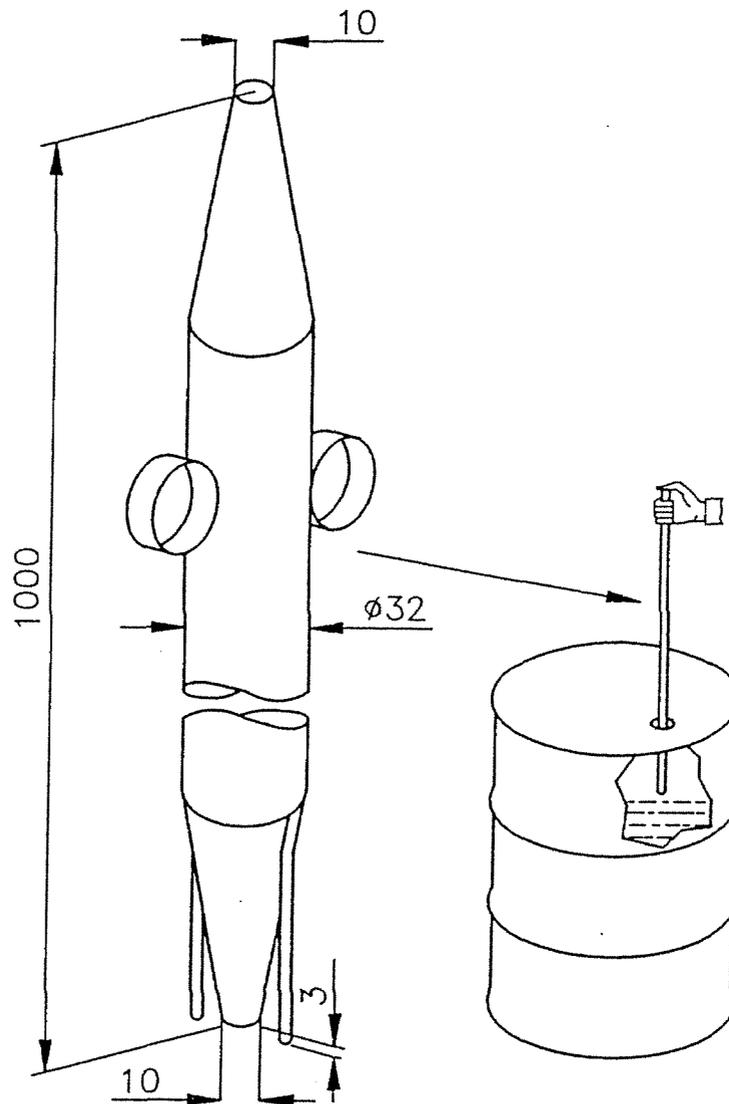
- 1.1 A thief for obtaining oil samples from 200 litre drums is shown in figure 1. It can be made either of metal, or a piece of glass tubing 1 m long to drain or to siphon samples from the drum.
- 1.2 The sample shall be taken with the thief in contact with the bottom of the drum.
- 1.3 To reduce absorption of moisture from the air, samples should not be drawn from containers until the oil is at least as warm as the surrounding air.
- 1.4 Notwithstanding the requirements for storage as per clause 2.1 of this instruction, samples shall never be taken while it is raining.
- 1.5 To take a sample from a drum using the thief method, the top hole shall be closed with the thumb and the open end quickly thrust to the bottom of the drum. The thumb must then be removed. When the thief is filled, the top hole must again be closed by means of the thumb, the thief quickly withdrawn from the drum and the sample of oil drained into the clean sample container.
- 1.6 The free hand shall not be used to block the bottom of the tube or guide the stream of oil.
- 1.7 Care shall be taken when obtaining and handling samples to avoid contamination to ensure accurate test results.

Note: If the sample does come into contact with the sampler's hands or breath, the sample must be retaken.

PAGE : 1  
DATE : AUGUST 1994  
REF. : SI(W) 2/4/1/6/2/GI.012

- 1.8 For most samples the container may be dark amber glass or plastic of at least 1 litre capacity but for gas analysis, aluminium or tin vessels shall be used. The oil samples shall not be exposed to strong light. An oil resistant seal shall be used in the screw caps to seal the sample against loss of gas or ingress of moisture.
- 1.9 The container shall be cleaned by rinsing with nheptane, iso-propane or trichloroethylene, dried and capped.
- 1.10 Sampling flanges and valves must be cleaned with lint-less cloths before taking samples.
- 1.11 When a sample is taken from drain valves at the bottom of transformers, other electrical equipment or road/rail tank cars, a sufficient amount of oil shall be discarded initially (at least 1 litre). This is to ensure that the sample taken is not the liquid which was trapped in the drain valve or pipe.
- 1.12 The container must be rinsed with the next approximately 200 ml of oil and the valve adjusted to give a steady flow. The valve must not be operated again until the sampling is complete. The container must be filled to the top, the cap secured immediately and taken to the laboratory for test.
- 1.13 When taking samples for water content tests, the operating temperature of the transformer oil must be recorded. If the water content of the first sample exceeds the permissible limit as indicated in appendix 3, a further sample must be taken and the average temperature of the oil in the transformer over the 24 hour period prior to taking the sample, must be taken for the purpose of passing/failing the oil. The oil temperature must be taken by using a glass thermometer held at the opening of the drain valve while taking the sample.
- Note: In the case of transformers, the sample shall not be taken within 24 hours after energising or de-energising the transformer.
- 1.14 Free gases in transformer oil could cause operation of the Buchholtz relay and an alarm trip. After the occurrence of a Buchholtz relay operation, the electrical maintenance staff must contact the Senior Engineering Technician (Electrical) of the Regional Test Laboratory to take samples of the oil for analysis of gas content.
- 1.15 The sampling point on the transformer must be chosen to obtain a representative sample of oil. It is thus essential to take a top and bottom sample from the transformer main tank, if possible.
- 1.16 Sampling containers must be properly labelled and suitably packed. The containers must not be opened until the sample is ready for analysis.

- 1.17 The date, type and location of the equipment, and in case of transformers, the oil temperature must be recorded on the label.
- 1.18 The sample shall be analysed within one week after being taken.



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FIG. 1: DRUM THIEF AND METHOD OF SAMPLING

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(INFRASTRUCTURE) (ELECTRICAL)**

<b>DISTRIBUTION</b>	<b>ENGINEERING INSTRUCTION</b>	<b>GENERAL</b>
<b>A, B</b>	<b>SUPERVISION AND MAINTENANCE OF INSULATING OILS IN ELECTRICAL EQUIPMENT</b>	<b>GI.012 ISSUE 2 APPENDIX 2</b>

PROCEDURES TO BE FOLLOWED FOR ROUTINE TESTING OF ELECTRICAL INSULATING OILS

1.0 VISUAL EXAMINATION

1.1 The colour and odour of the oil can provide valuable information regarding condition of the oil and these aspects must be recorded. This examination must be used to control the validity of the individual tests described in clauses 2.0 to 5.0 of this Appendix.

1.2 Cloudiness may be due to suspended moisture, or solid matter such as iron oxide or sludge.

1.2.1 Dark brown oil is indicative of dissolved asphaltene.

1.2.2 Green oil indicates the presence of copper soap and further deterioration of the oil can be expected to be rapid.

1.2.3 An acid smell is indicative of volatile acids.

2.0 DIELECTRIC STRENGTH

2.1 Test instrument

Dielectric strength shall be measured with a test cell complying with the latest edition of IEC 156 recommendation and shall have spherical electrodes.

2.2 Test method

2.2.1 The sphere gap shall be set to 2,5 plus minus 0,1 mm.

2.2.2 The cell and oil shall initially stand for 5 minutes and shall be covered during this period.

2.2.3 The voltage applied shall be raised at a uniform rate of 2 kV/s until breakdown occurs. This voltage shall be recorded.

2.2.4 After each breakdown test, the oil shall be gently stirred using a clean, dry glass rod or an automatic stirrer if provided, and then be allowed to stand for one minute.

PAGE : 1

DATE : AUGUST 1994

REF. : SI(W) 2/4/1/6/2/GI.012

- 2.2.5 Six breakdown tests shall be carried out on the same cell filling.
- 2.2.6 The dielectric strength is deemed to be the arithmetic mean of the six tests.

Note: Complete breakdown is indicated by the operation of the circuit breaker protecting the test set. This may be automatically recorded by some of the newer oil test sets.

- 2.3 Dielectric strength tests must be undertaken in a temperature controlled room and the oil samples must have attained a fixed room temperature of 25 plus minus 2 degrees Celsius.

### 3.0 WATER CONTENT

- 3.1 The crackle method is a crude method of detecting water in oil and only indicates presence of free water and may therefore only be used to test oil in switch-gear.
- 3.2 To test the moisture content of oil in transformers it is essential to make use of the Standard Test Method for testing for water in insulating liquids ASTM D 1553/79 method B (Karl Fischer Method). This method can determine water content of insulating liquids in the range 0 to 75 ppm.

- 3.2.1 The Coulometric automatic Karl Fischer titration instrument shall be used for this test.

### 4.0 NEUTRALISATION NUMBER (ACIDITY)

#### 4.1 Apparatus

- 4.1.1 25 ml pipette.
- 4.1.2 4 or 5 litre beaker.
- 4.1.3 100 ml graduated cylinder, with 1 ml divisions.
- 4.1.4 250 ml beaker.
- 4.1.5 10 ml burette with 0,1 ml graduations and 0,02 ml division.

#### 4.2 Solutions

- 4.2.1 Sufficient volume of normalised solution of potassium hydroxide in alcohol (Alcohol KOH) prepared as per Appendix 4 (Normality [N]).

4.2.2 Carrier-solution

Use 4760 ml isopropyl alcohol, add 240 ml distilled water, stir this mixture thoroughly. Add 5 litres of white spirits to the first mixture and stir well.

Note: Always add the distilled water to the isopropyl alcohol and not vice versa.

4.3 Indicators

Phenolphthalein or Paranaphtholbenzene or Alkali Blue  
(See note clause 14.1.2 of Instruction).

4.4 Test method

4.4.1 Take approximately 100 ml of carrier-solution, add three drops of phenolphthalein indicator and stir thoroughly using a clean glass rod.

4.4.2 Fill the 10 ml burette with alcohol KOH and titrate against the above colourless solution until the colour changes to pink (not crimson). This should take between one and five drops of KOH. Note the burette reading (X).

4.4.3 Pipette 25 ml of oil and add this to the titrated solution obtained in clause 4.4.2.

4.4.4 Titrate KOH against the solution of clause 4.4.3 until the colour changes and note the burette reading (A). The colour change will be dependent upon the original solution colour. If phenolphthalein indicator is used the change could be to an orange colour. With colourless oil the change would be to a pink colour. With light green oil the change would be to a light brown colour. If alkali blue indicator is used, the colour change will be from blue/blue green to a strong red colour.

4.4.5 Calculate the acid content of the oil using the following formula:

$$(A-X) \times 2,65 \times N \text{ mg KOH/g oil}$$

Where: N = Normality of KOH.

A = First titration KOH.

X = Second titration oil.

4.4.6 In some instances oil is a very dark red-amber colour, and when diluted with carrier-solution it may still mask the indicator change to pink. To overcome this situation either:

- 4.4.6.1 Use the alternative indicator (paranaphtholbenzene) or
- 4.4.6.2 Neutralise 300 ml carrier-solution and add 25 ml of the oil under test. Phenolphthalein indicator may be used unless the solution still has a definite red tint.

Note: Paranaphtholbenzene will change from an amber colour to green or green-brown.

**5.0 DETERMINATION OF SEDIMENT AND SLUDGE**

5.1 To determine the content of sludge in the oil, the method described in IEC 422, Appendix A, or BS 148 must be used.

5.2 This test requires specialised apparatus and can only be carried out by specially equipped laboratories.

**6.0 DISSOLVED GAS ANALYSIS**

To determine the gas content in oil, the method described in IEC 567 must be used.

Note: The dissolved gas analysis can only be done by suitably equipped laboratories providing this service.

END

**SPOORNET  
(INFRASTRUCTURE) (ELECTRICAL)**

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A, B	<b>SUPERVISION AND MAINTENANCE OF INSULATING OILS IN ELECTRICAL EQUIPMENT</b>	<b>GI.012 ISSUE 2 APPENDIX 3</b>

**MAXIMUM PERMISSIBLE WATER CONTENT OF OIL IN TRANSFORMERS  
VERSUS TEMPERATURE OF TOP OIL SAMPLE UNDER EQUILIBRIUM  
CONDITIONS**

TEMP. OIL Deg. Celsius	MOISTURE ppm	TEMP. OIL Deg. Celsius	MOISTURE ppm
10	8	31	24
11	9	32	26
12	9	33	27
13	10	34	29
14	10	35	30
15	11	36	31
16	11	37	32
17	12	38	34
18	12	39	36
19	13	40	38
20	13	41	40
21	14	42	43
22	15	43	46
23	16	44	50
24	17	45	53
25	18	46	57
26	19	47	60
27	20	48	64
28	21	49	67
29	22	50	71
30	23		

Note 1: If the water content exceeds 50 ppm, irrespective of temperature, the office of Chief Engineer (Electrical) must be notified.

Note 2: This table is based on values being used by ESKOM for moisture content of 5 percent in the paper insulation.

END

PAGE : 1  
DATE : AUGUST 1994  
REF. : SI(W) 2/4/1/6/2/GI.012

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PROCEDURE TO BE FOLLOWED FOR PREPARATION OF CHEMICALS FOR OIL TESTING

1.0 INDICATORS

These are made by dissolving approximately 1 g of the indicating material (solid) in 100 ml carrier-solution.

Note: Alkali blue does not readily dissolve and should be refluxed in the carrier-solution.

2.0 ALCOHOL KOH

Note: KOH pellets must be kept in sealed bottles. This material absorbs water which will affect weight.

2.1 Dissolve 15 g KOH in plus minus 15 ml of distilled water. When completely dissolved, add the solution to 5 litres isopropyl alcohol. Allow the final solution to stand for 1 week and shake the final mixture every day for ten minutes, then decant clear liquid from the residue. Store in a dark amber bottle at approximately constant temperature in a dark place for 3 months before use.

2.2 Normalisation and storage:

2.2.1 Take approximately 0,5 g of potassium hydrogen phthalate and determine the mass accurately (W g).

2.2.2 Dissolve the potassium hydrogen phthalate in 100 ml distilled water. Add three drops phenolphthalein indicator.

2.2.3 Titrate alcohol KOH from a 10 ml burette into the above solution until the colour of the solution changes to pink. Record the volume of KOH used (V ml).

2.2.4 The KOH normality is calculated from the formula:

$$\begin{aligned}\text{Normality KOH} &= \frac{W}{V} \times \frac{1000}{204,23} \\ &= \frac{W}{V} \times 4,9\end{aligned}$$

Where: N = Normality of KOH.  
W = Mass potassium hydrogen phthalate.  
V = Volume KOH pellets.

2.2.5 Always store alcohol (KOH) in amber bottles at constant temperature in a dark place.

END



**Electrical Test Laboratory  
Traction / E L & P Substation  
Test Sheet**



**SUBSTATION:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**TRANSFORMER:** \_\_\_\_\_

MAKE: \_\_\_\_\_ KVA : \_\_\_\_\_

SERIAL NO.: \_\_\_\_\_ VOLTAGE: \_\_\_\_\_

DATE OF MANUFACTURE: \_\_\_\_\_ VECTOR: \_\_\_\_\_

**INSULATION RESISTANCE TEST:     2 500 V MEGGER     (2 mΩ/kV = Good norm)**

EARTH TO HT: \_\_\_\_\_ HT TO LT1: \_\_\_\_\_

EARTH TO LT1: \_\_\_\_\_ HT TO LT2: \_\_\_\_\_

EARTH TO LT2: \_\_\_\_\_ HT TO AUX.: \_\_\_\_\_

EARTH TO AUX.: \_\_\_\_\_ LT1 TO LT2: \_\_\_\_\_

LT2 TO AUX.: \_\_\_\_\_ LT1 TO AUX.: \_\_\_\_\_

**VOLTAGE RATIO TEST:     3 PHASE GENERATOR**

SUPPLY VOLTAGE (3 phase) \_\_\_\_\_ V

	Primary	Secondary	TAP 1	TAP 2	TAP 3	TAP 4	TAP 5
LT1:			V	V	V	V	V
			V	V	V	V	V
			V	V	V	V	V
LT2:			V	V	V	V	V
			V	V	V	V	V
			V	V	V	V	V
AUXILIARY:			V	V	V	V	V
			V	V	V	V	V
			V	V	V	V	V

AT TAP No. 3: CALCULATED RATIO = HT/LT = \_\_\_\_\_ / \_\_\_\_\_ = \_\_\_\_\_

MEASURED VOLTAGE = SUPPLY V / RATIO = \_\_\_\_\_ / \_\_\_\_\_ = \_\_\_\_\_ V

TESTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**Electrical Test Laboratory  
TEST CERTIFICATE**



**SUBSTATION:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**OIL TEST REPORT**

	DESCRIPTION
SUBSTATION	
TRANSFORMER	
MAKE	
DATE OF MANUFACTURE	
SERIAL No.	
KVA RATING	
VOLTAGE HV/LV	
DATE OF SAMPLE	
OIL VOLUME GAL/LITRE	

	TEST RESULTS	ACTION REQUIRED
	BOTTOM SAMPLE	
OIL TEMPERATURE DEG. C		
WATER CONTENT/KARL FISCHER (ppm)		
APPEARANCE/COLOUR OF OIL		
N.N. ACIDITY mg KOH/g OIL		
DIELECTRIC BREAKDOWN STRENGTH AVR. (kV)		
RECOMMENDATION		

- A THE SAMPLE COMPLIES WITH THE REQUIREMENTS.**
- B THE OIL MUST BE FILTERED IN ORDER TO IMPROVE ITS DIELELCTRIC BREAKDOWN STRENGTH.**
- C THE OIL MUST BE FILTERED WITH HEAT AND VACUUM IN ORDER TO REMOVE THE EXCESS MOISTURE.**
- D OIL MUST BE REGENERATED/REPLACED AND A SAMPLE SUBMITTED AFTER 6 MONTHS. (SHOULD THE ACIDITY HAVE INCREASE BY MORE THAN 0,03mg KOH/g OIL, THE TRANSFORMER SHALL BE DE-SLUDGED).**
- E A SLUDGE TEST MUST BE CARRIED OUT. PLEASE SUBMIT SAMPLE FOR TEST.**

**TESTED BY:** \_\_\_\_\_